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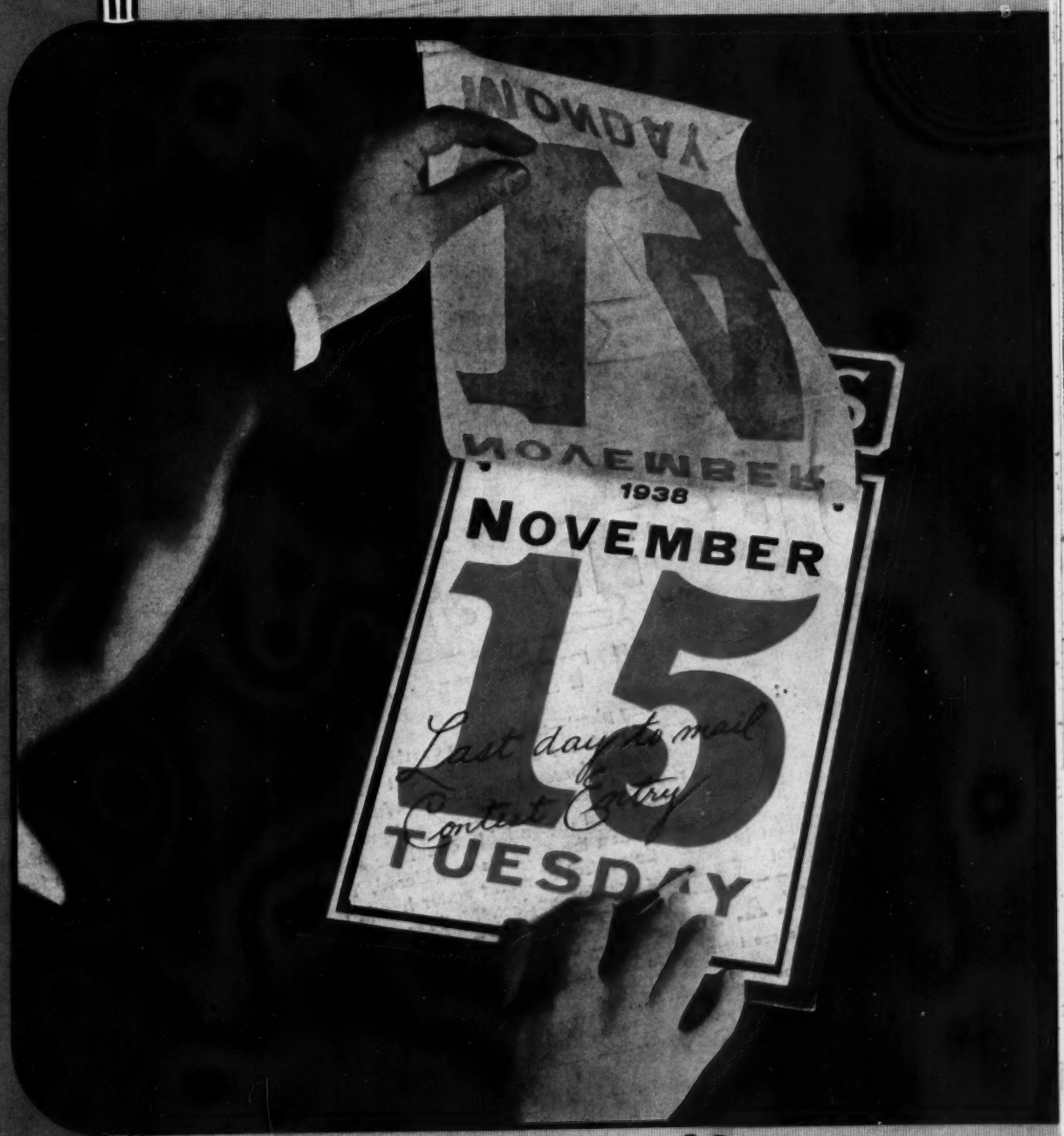

Plumbing & Heating Contracting and Merchandising

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FORCED CIRCULATION WITH THRUSH CIRCULATOR

A better heating plant—more home comfort for your customers—less labor for you—and lower price! It's the combination that will win new business and lifelong friends for you. Circulation forced by a Thrush Water Circulator means reduced costs for installation, reduced fuel cost and increased profit for you. The Thrush Water Circulator is the finest and most dependable circulator on the market today—far lower in price than any other when the value is considered. Thrush Flow Control System offers completely automatic control of warm water heating plants, with year around domestic hot water supply as a by-product. Mail the coupon below for more information.

H. A. THRUSH & CO., Box 459, Peru, Indiana

We are interested in more facts about Thrush Flow Control Systems and Thrush Water Circulators.

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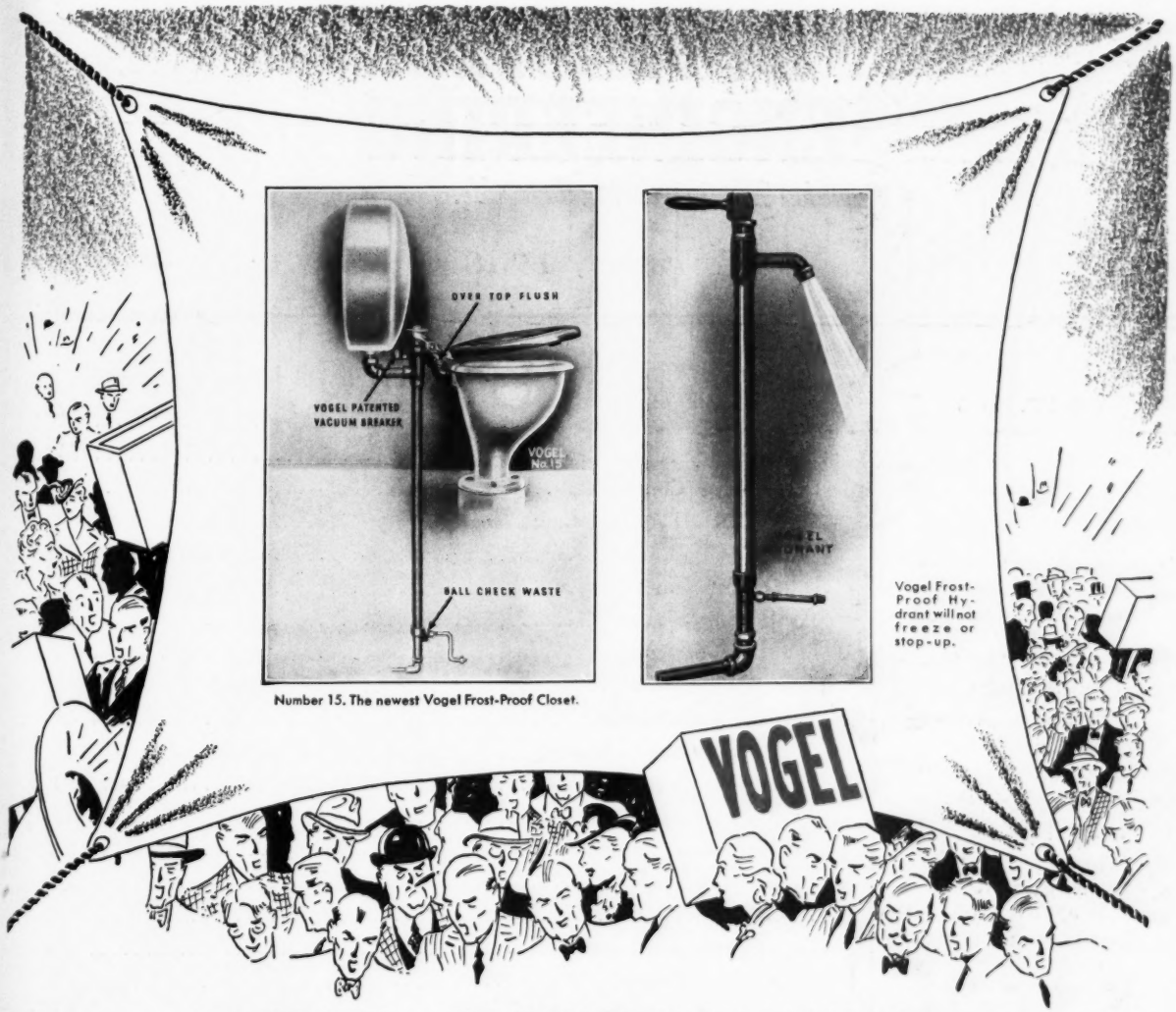

Number 15. The newest Vogel Frost-Proof Closet.

Vogel Frost-Proof Hydrant will not freeze or stop-up.

IT'S UNANIMOUS!

VOGEL Frost-Proof Closets and Hydrants are your customers choice.

Over a period of years, in spite of the hardest kind of use, you can depend on **VOGEL** Frost-Proof Closets to give extra long service and require fewer repairs. More than 600,000 have been installed and we have never known of one to freeze when properly installed.

The **VOGEL** Frost-Proof Hydrant, because of its convenience and dependability, is being installed in unheated garages, service stations, on farms and dairies, and any place where a supply of water is required all year 'round. Vote for **VOGEL** Products. You can depend on them and they are profitable to handle.

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JOSEPH A. VOGEL COMPANY, *Wilmington, Delaware*

VOGEL PATENTED *Products*

DOMESTIC ENGINEERING

Plumbing & Heating Contracting and Merchandising

November, 1938

Vol. 152, No. 5

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YOUR FAMILY DESERVES IT

WATER SYSTEM BUSINESS Builds "PLUMP BUSINESS"

for

MYERS DEALERS

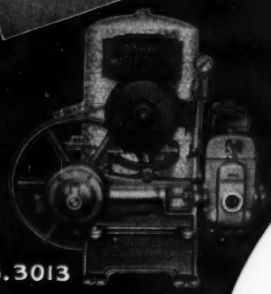


FIG. 3013

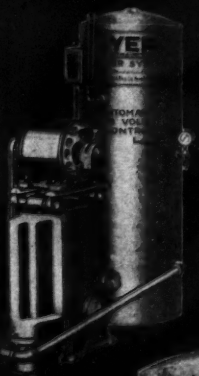


FIG. 2700

FIG. 3012

Farmers and suburban dwellers the country over are awake to the fact that modern water facilities not only provide them with many comforts and conveniences but, more important still, bring them extra profits through increased crop and live stock returns.

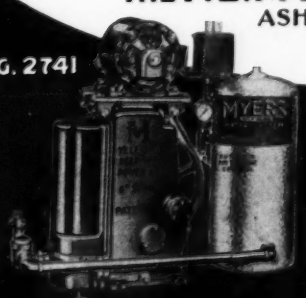
To make a long story short, they are sold on the value of running water—and they are sold on Myers Water Systems. They have been reading about them for years in their leading farm journals and magazines. They have seen them demonstrated at hundreds of fairs this fall. They recognize the vast difference between Myers and the cheaply constructed, small capacity units which are sold on a price basis only and not on a lifetime of dependable service like the Myers.

In many localities whole neighborhoods have Myers Water Systems. One installation paves the way for many others. Always plump business for dealers who sell the Myers Line.

Let's have your inquiry. Our new catalog is ready. Ask for a copy and get complete information from Pump Headquarters.

THE F.E.MYERS & BRO. CO.
ASHLAND, OHIO.

FIG. 2741



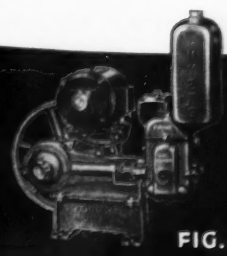


FIG. 3014

PUMPS – WATER SYSTEMS – SPRAYERS – HAY TOOLS – DOOR HANGERS

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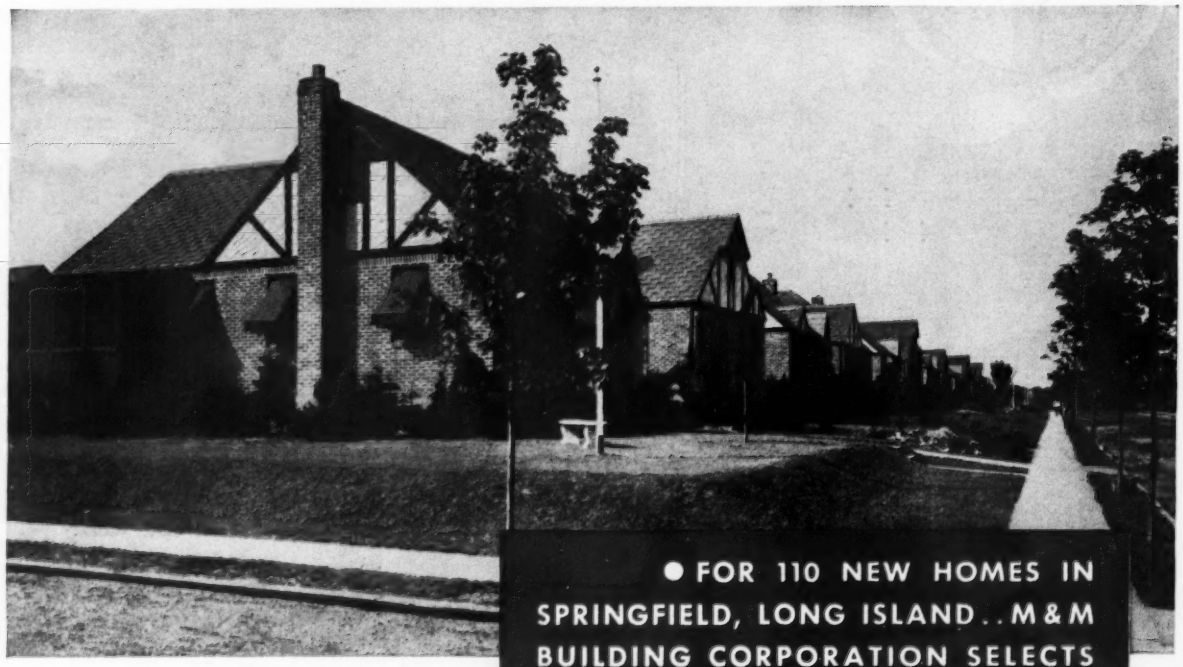
THOSE WHO MUST SELL WHAT THEY BUILD SELECT ANTHRACITE FOR HEATING



● FOR 110 NEW HOMES IN SPRINGFIELD, LONG ISLAND . . M & M BUILDING CORPORATION SELECTS ANTHRACITE HEATING EQUIPMENT

THE WISE heating contractor knows that year after year heating cost is even more important to the home owner than original equipment cost.

More and more, such heating contractors are recommending Anthracite for fuel, because they find that modern Anthracite heating is so satisfying to the home owner, and fuel bills are so easy on the pocketbook, that extra good-will for the heating contractor is bound to follow.

The builder of the above illustrated homes says: "My experience in building this type of home definitely shows that it is cheaper to heat them with Anthracite than it is to heat them with oil."

Anthracite is the one fuel which will provide this economy without sacrificing comfort and convenience.

The book, "Modern Anthracite Equipment," describes the newest developments in automatic heat and air conditioning. A copy will be sent upon request.

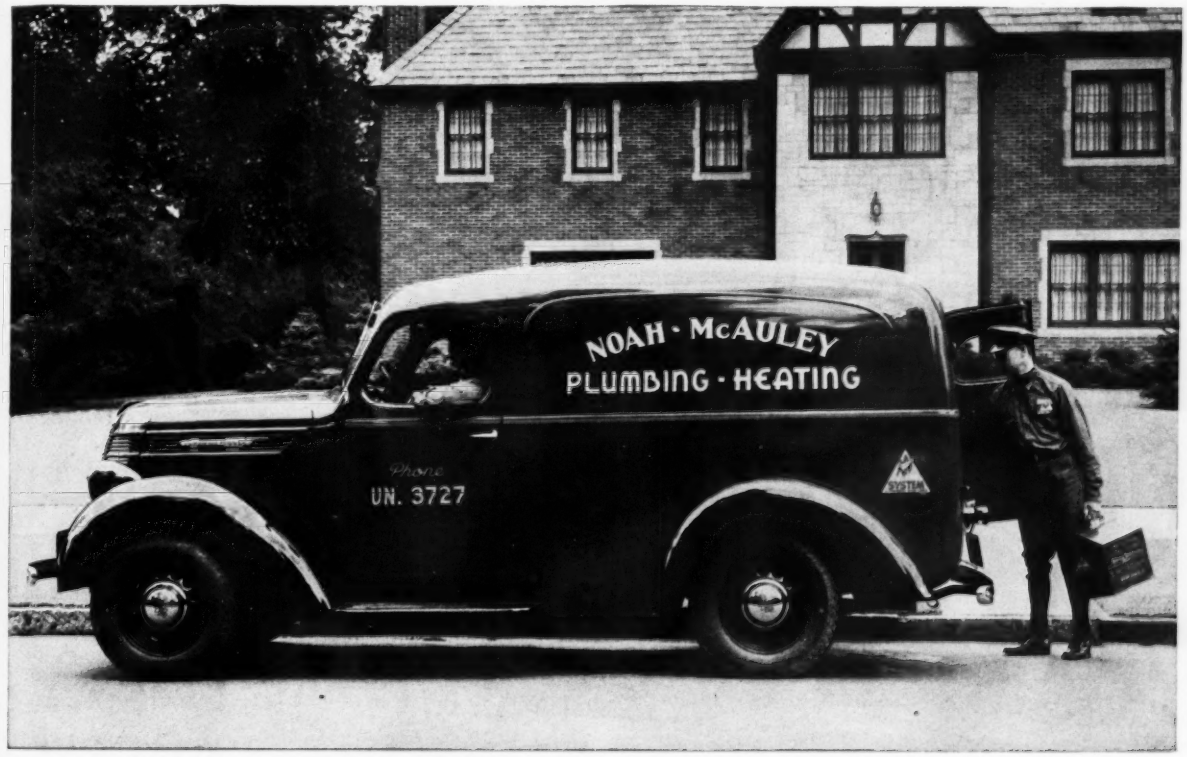
ANTHRACITE INDUSTRIES, INC.
Chrysler Building, New York

ANTHRACITE INDUSTRIES INCORPORATED approved

This Seal of Approval appears on Anthracite equipment only after it has passed the most rigid tests in the heating field.

Pennsylvania
ANTHRACITE
COAL

INTERNATIONALS Offer the *Best* Solution to Hauling Problems



The International Half-Ton Model D-2 Truck with either pick-up or panel body is an ideal unit for plumbers who want a light truck. This unit is used in Buffalo by Noah-McAuley.

The *quality* built into International Trucks shows up to the user's advantage when these units go on the job. The investment you make in Internationals *pays dividends* in economy of operation and maintenance, dependability, and long life. Time alone has not built the reputation and preference for Internationals—*performance per dollar* has been the answer.

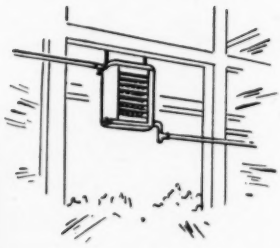
Today Harvester experience and high-grade workmanship are available in 30 models and 99 wheelbase lengths—ranging in size from Half-Ton units to powerful Six-Wheelers.

Ask the nearby International Branch or Dealer to show you the right trucks for your job. Remember this: when you buy Internationals, you get the benefit of the famous International after-sale service. International branches and dealers are equipped to render efficient, reliable service to keep these trucks on the job the maximum time.

INTERNATIONAL HARVESTER COMPANY
(Incorporated)
180 North Michigan Avenue Chicago, Illinois

INTERNATIONAL TRUCKS

"SAY, THESE HANDY HANGERS ARE GREAT TIME AND LABOR SAVERS!"



Hangers furnished with every 'Speed Heater'

YOU know what a nuisance it is when you have to make your own unit heater hangers. You may not have the necessary material on hand. Then, too, it takes time and costs money.

This problem is banished by Sturtevant "Speed Heaters". Handy, mild steel hangers are furnished with every unit. Punched, all ready to bolt on . . . quickly, easily formed to any desired shape in your vise.

Just one of many reasons why contractors swear by "Speed Heaters". Check the other big advantages listed.

Write for "Speed Heater" catalog . . . or ask our distributor, Crane Co., for a copy.

B. F. STURTEVANT CO., HYDE PARK, BOSTON, MASS.
Branch Offices in 40 Other Cities
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Sturtevant
REG. U. S. PAT. OFF.
Puts Air to Work

YOU CAN'T BEAT THIS STURTEVANT SPEED HEATER COMBINATION

1 Time-Saving Hangers
Furnished with every Speed Heater. Mild steel. Easily formed in vise.

2 Double Pipe Connections
Supply and return connections may be made on *either* side of unit. Save time, labor, pipe.

3 Maximum Headroom
You can install Speed Heaters tight up against ceiling.

4 Guaranteed for 200 lbs.
Suitable for all steam pressures up to 200 lbs.

5 Low Final Temperatures
Assure comfort for people near heaters.

6 Guaranteed Capacities
In accordance with A. S. H. V. E. requirements.

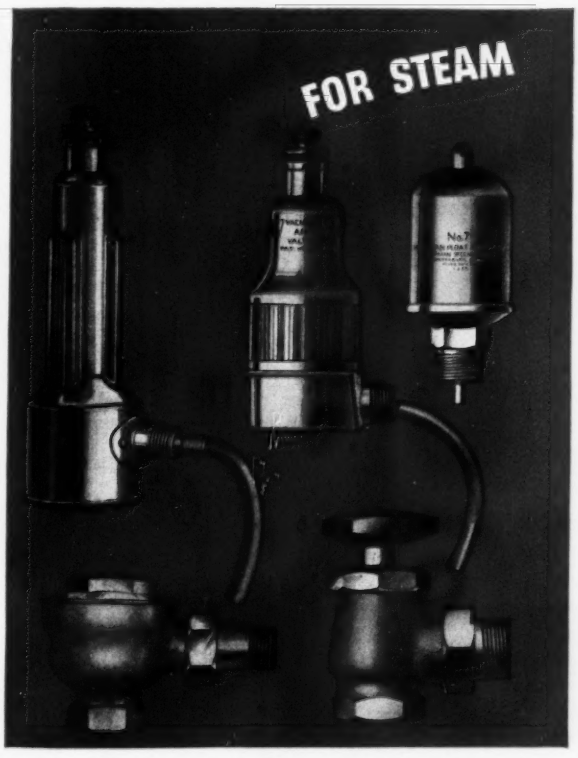
7 Many Sizes
Ranging from 100 sq. ft. equivalent direct radiation to 1250 sq. ft.

8 Quick Shipment
Popular voltages stocked at local points.

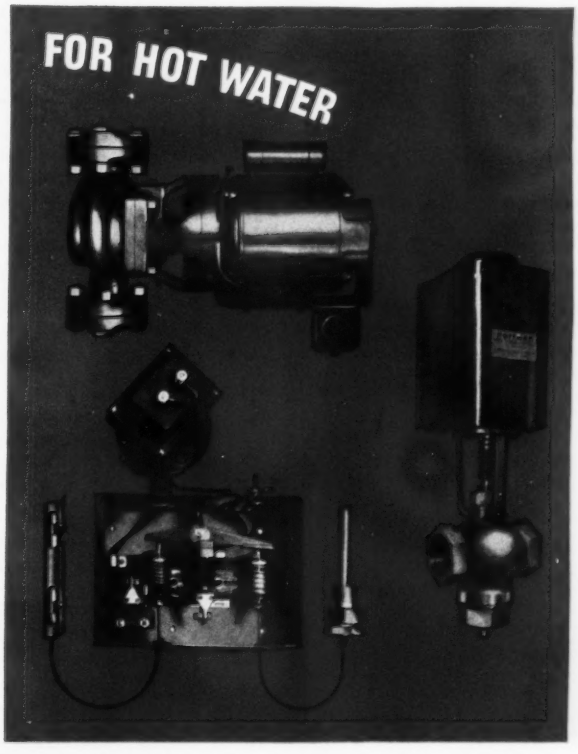
SPEED HEATERS ARE DISTRIBUTED BY CRANE CO.

It wouldn't take much to sell her a modernizing job!

..AND HOFFMAN HAS EVERY SPECIALTY—FOR STEAM AND HOT WATER—WHICH ENABLES YOU TO BRING ANTIQUATED HEATING SYSTEMS UP TO DATE



A simple one-pipe steam system achieves the maximum of comfort and economy when vacuumized with Hoffman Valves. No other valve has the Double Air Locks, unequalled in maintaining a high vacuum, and Leak-proof Shell. You do not pay a premium price for the high quality of Hoffman Valves and they are offered in a price range which meets all competitive conditions.



Here is the most sensational opportunity for modernizing profits you've had in years! Hoffman Hot Water Controls effect an amazing improvement in automatically-fired gravity or forced hot water systems. For the first time, room temperature can be held at a constant level and "Cold 70" abolished. Send at once for the Hoffman Hot Water Controlled Heat Manual which explains fully the operation and installation of this revolutionary system.

HOFFMAN SPECIALTY CO., INC.

DEPT. RX-11, WATERBURY, CONN.

Makers of Hoffman Venting Valves, Supply Valves, Traps, Pumps and Hot Water Controls—sold everywhere by Leading Wholesalers of Heating and Plumbing Equipment.

LARGE PORTS— *Fast Venting*

ON ONE pipe steam systems the cure for hard-to-heat, sluggish radiators and unbalanced heating is FAST VENTING.

No radiator can possibly heat up until it has been vented, and that includes the supply risers and the main. The faster the venting, the faster the heating.

FAST VENTING has been accomplished by incorporating unusually large ports in both the No. 861 Hurivent (for mains) and No. 300 Multiport (for radiators).

This large port air valve (the No. 300 Multiport) was made possible by the development of the Automatic Modulator. This allows full port opening until steam pressure reaches a few ounces. Beyond that point it automatically reduces port opening to that of the ordinary valve. Thus when a radiator is suddenly opened to normal pressure it vents in the conventional manner.

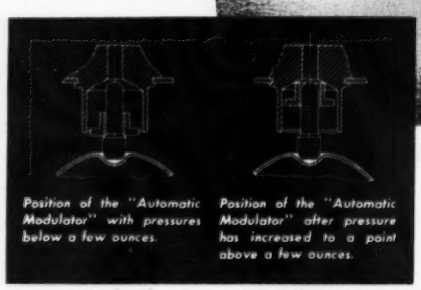
Any large port air valve without some provision to reduce the port area when the radiator is opened to normal pressures will retard venting by short circuiting, and cause water hammer. The patented Automatic Modulator prevents this.

The No. 861 Hurivent has a full half inch port in contrast to the ⅛-inch port of conventional venting valves. See illustrated comparison. Because of this No. 861 vents 15 times as fast as the ordinary valve.

With the Ideal Fast Venting System (No. 300 Multiports on the radiators and No. 861 Hurivents on the mains) all venting is accomplished practically as soon as the burner comes on, before boiler pressure has built up to more than a few ounces.

The No. 300 Arco-Detroit Multiport

The No. 861 Arco-Detroit Hurivent



Position of the "Automatic Modulator" with pressures below a few ounces.

Position of the "Automatic Modulator" after pressure has increased to a point above a few ounces.

Even on items as inexpensive as air valves and vent valves you may want to sell on monthly payments—through our affiliate—Heating and Plumbing Finance Corporation.

Remember the Prize Contest—100 prizes for the best 100 letters reporting success of the Ideal Fast-Venting System in eliminating heating trouble. Write to us for details or ask your wholesaler.

FOR SALE BY ALL LEADING WHOLESALERS

DETROIT LUBRICATOR COMPANY

General Offices: DETROIT, MICHIGAN

Division of American Radiator & Standard Sanitary Corporation

Canadian Representatives—RAILWAY AND ENGINEERING SPECIALTIES LIMITED, Montreal, Toronto, Winnipeg

STREAMLINE COPPER PIPE AND STREAMLINE SOLDER FITTINGS..

TRADE MARK REG. U.S. PAT. OFFICE

Installed in the World's Safest School" at New London, Texas

After the disaster of the New London, Texas, school building in March, 1937, when 296 lives were lost in an explosion, the school board were faced with the problem of erecting a school in which no repetition of such disaster could possibly occur. They decided to build what is now nationally known as "THE SAFEST SCHOOL IN THE WORLD". All materials and workmanship were the best procurable, and it is a significant fact that STREAMLINE Copper Pipe and Solder Fittings were used in this school building for the plumbing conducting system.

Architect	Mechanical Engineer	Plumbing & Heating Contractor	General Contractor	Plumbing Supply Jobber
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● STREAMLINE Copper Pipe connected with Solder Fittings is a piping installation for plumbing or heating that is highly resistant to water borne corrosion. It is a great deal less subject to liming or clogging than most piping materials. Constant vibration has no effect upon it. Its initial cost is very little higher than materials that corrode and leak after a few years of service—and over a period of years its cost is a great deal less.

When the expert plumber or steamfitter installs STREAMLINE, he knows that the job will stay right and will render uninterrupted service for countless years ahead.

There are abnormal conditions of soil and water where no piping will last indefinitely, but even under these conditions STREAMLINE *is, in a majority of cases, the best to use.* **UNDER ORDINARY WATER CONDITIONS STREAMLINE WILL OUTLAST THE BUILDING IN WHICH IT IS INSTALLED.**

On account of its high resistance to corrosion and clogging and its smooth uniform conducting area, STREAMLINE Copper Pipe actually delivers the heating element to the radiator quicker and with less heat loss than its corresponding sizes in other pipe. Radiators gain their maximum efficiency in keeping the building comfortably heated.

The plumbing contractor who installs a copper job lifts himself out of the highly competitive class and can earn the profit to which his years of experience and skill entitle him. He installs the material that is practical and handy to use—no back-breaking threading and lifting—less equipment to carry. A copper job is a "business getter". Almost invariably when the contractor installs a copper job in a neighborhood, it acts as a "silent salesman" for him for the procuring of additional jobs, and last but not least, it builds his reputation with the building owner. He need have no "come backs"—the job is right and it stays right.

Send for Catalog G. Order through your jobber.

Manufactured in Canada Under License by Canada Wire & Cable Co. Ltd., Toronto, Canada

STREAMLINE
PE AND FITTINGS DIVISION
UELLER BRASS CO.
PORT HURON, MICHIGAN

. . . always accessible

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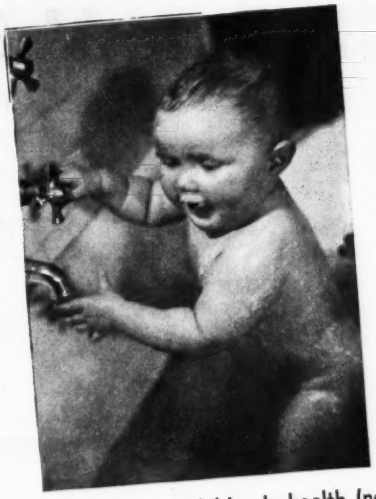
NAMES AND ADDRESSES

. . . of all known manufacturers of plumbing and heating items.

"IT'S BUYER-TESTED and INDUSTRY-ACCEPTED"

DOMESTIC ENGINEERING COMPANY, 1900 Prairie Avenue, CHICAGO, ILL.



LUCKY KID!

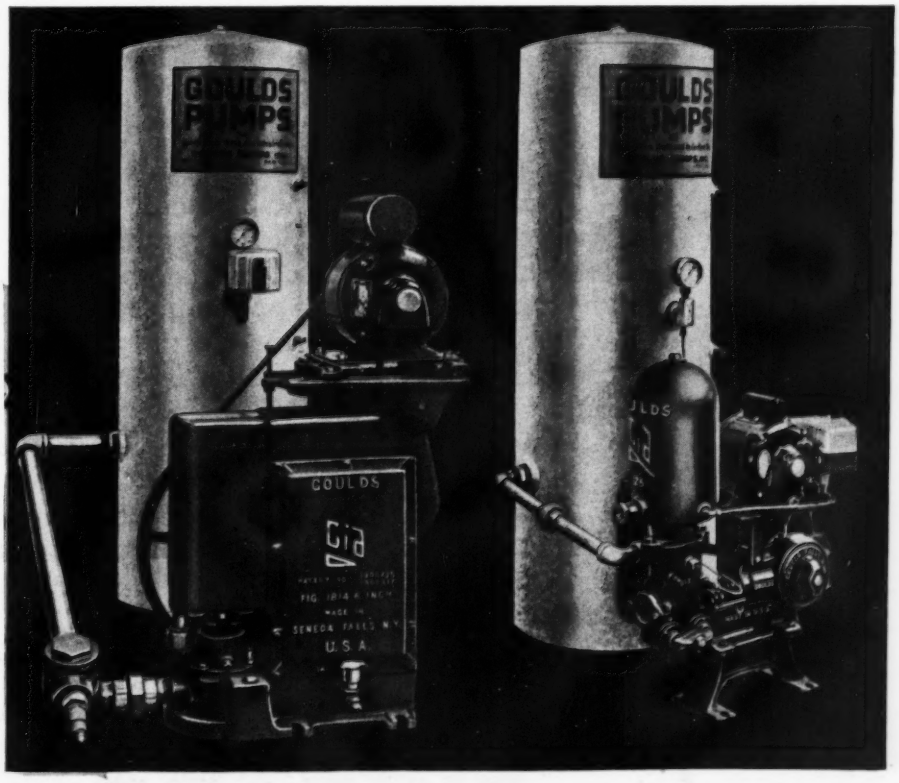
AND HE REPRESENTS A READY MARKET FOR YOU

This youngster's parents are interested in his health above all else. They know that running water in the home is a substantial aid in protecting that health. Right in your area there are many other families who would like to buy running water systems for the same reason—their children's health (not to mention their own convenience). You will find them ready and able to buy when you stock and push Goulds inexpensive CID Water Supply Systems.

Goulds CID Water Systems for shallow wells and deep wells are shown below. They cost as little as three cents a day to operate, yet are fully automatic—even self oiling. Priced for quick sale and high profit.

Remember—Goulds CID sales mean plumbing and accessory sales on every installation. If your regular jobber does not handle the complete Goulds line write us today.

GOULDS PUMPS, Inc.
200 FALL ST.
Seneca Falls, N. Y.



Left Illustration: Goulds CID Water Supply System for deep wells.

Right Illustration: Goulds CID Water Supply System for shallow wells.

GOULDS

LEADERS SINCE 1848

RUNNING WATER

YOUR FAMILY DESERVES IT

8525

CHICAGO FAUCET NEWS

Issued Monthly by The Chicago Faucet Co., 2700-22 N. Crawford Ave., Chicago, Ill. Vol. 7, No. 1

All parts of Chicago Faucets subject to wear are incorporated in a standardized, removable, interchangeable operating unit and are as easily renewable as an electric light bulb.

There's a big demand

FOR THIS REALLY FINE

No. 797

Duplex Combination Lavatory Fixture

HI-LITE DESIGN

Either Way

The No. 797 Duplex fixture may be had with pop-up waste, as shown at right, or less waste and with ring chain stay for plug and chain waste, as below. In ordering, specify which. For lavatories drilled for 4-inch centers. Top lever handles, Hi-Lite pattern, chromium plated.

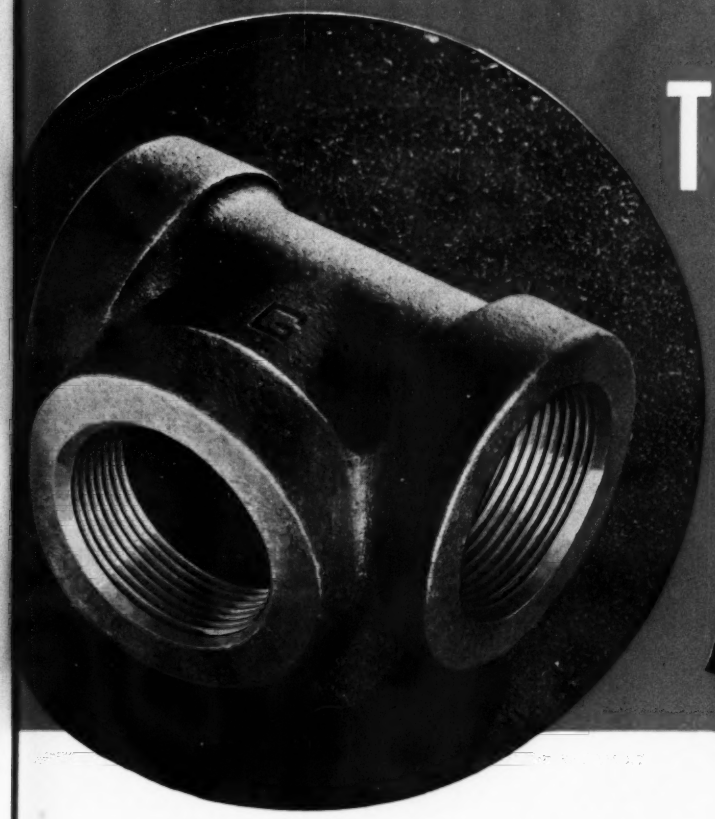
WITH the surge of small home building has come a demand for small, compact lavatories for bath and toilet rooms—lavatories that call for a combination fixture. The Duplex solves this problem. It fits any lavatory drilled for 4-inch centers and is available with or without waste. No handsomer fixture could be desired. Hi-Lite patterned, with grace in every line, the Duplex gives a touch of distinction, an air of "class", to any bathroom in which it is installed. Put a Duplex on display and call small home builders' attention to it. It's a sure-fire seller.

Ask your wholesaler

CHICAGO FAUCETS

Last as Long as the Building

TIE-UP WITH FITTINGS THAT MAKE TIGHT JOINTS...



se SQUARE "GEES"

h your margin on every job in jeopardy, leave nothing to chance. der fittings by name . . . all the time . . . order Square "Gees". Square e" malleable and cast-iron fittings lower installation costs, step-up r profit. Square "Gee" fittings make-up quick . . . tighten tight . . . o mechanics hustling along . . . beating your time estimates. Smooth mfering makes them start instantly. Their clean-cut threads never bind screw up fast . . . easily . . . tight as a drum. Threaded with modern cision equipment and triple inspected, every Square "Gee" fitting is fect . . . identical . . . usable. With Square "Gees" to work with, your chanics will do more work . . . better work . . . complete installations in imum time. Start making-out better on every job. Use fittings that make-quick and test-up tight . . . first time . . . always. Order Square "Gee" leable and cast-iron fittings . . . by name . . . from your wholesaler.

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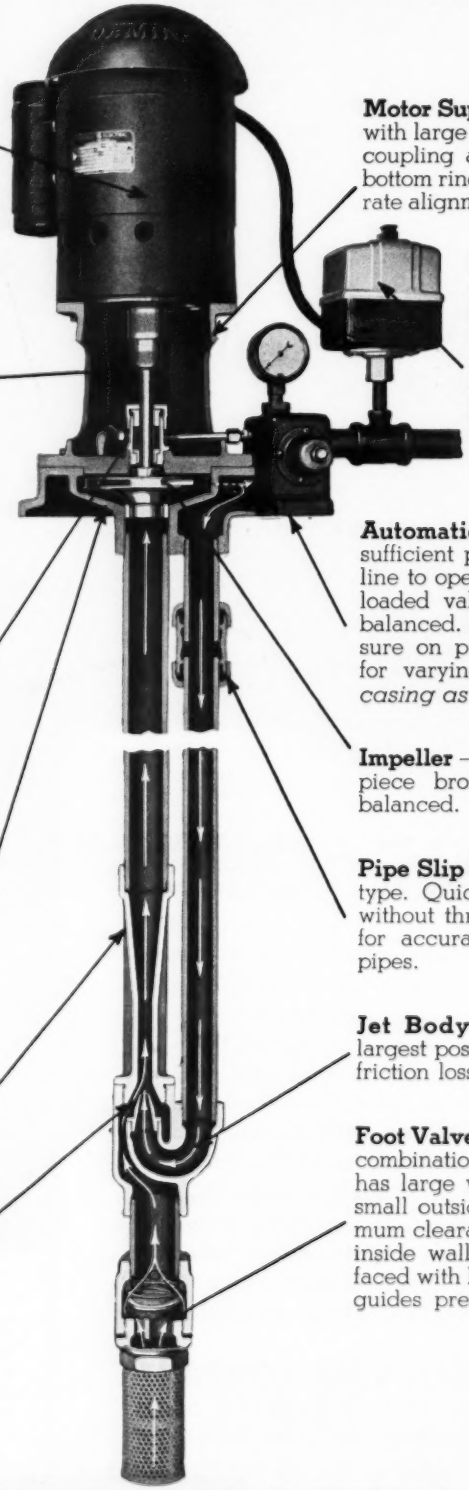
SQUARE Pipe | **"GEE" Fittings**

MALLEABLE, CAST IRON | DRAINAGE, BRASS, COPPER

DEMING JET PUMPS



Motor — Vertical, solid shaft, ball bearing motor, drip proof. Bearing housings carry sufficient grease for six months' operation.

Pump Shaft and Coupling (*Pat. applied for*) — Pump shaft and coupling are of one piece solid stainless steel. Coupling is of the slotted compression sleeve type, insuring a close coupled pump and motor shaft assembly, which will run absolutely true. Motor shaft diameter limits have no influence on fit and motor can be uncoupled as often as desired or necessary, without affecting alignment when reassembled.

Stuffing Box and Gland — The perfect alignment of motor and pump shaft insures a trouble-free stuffing box. It is equipped with renewable throat bushing which is securely screwed into motor support and bored with the same. Gland is of the conventional follower type.

Casing — Pump base, casing and regulator valve body are cast integral, making a compact rigid unit which supports the pump, motor, piping and ejector. At the suction opening, a renewable bronze wearing ring is pressed into the casing, machined in place for impeller fit.

Jet Tube — Bronze casting. Shaped to convert the high velocity of the water stream efficiently into pressure.

Jet Nozzle — Made of hard phosphor bronze to resist wear. Correctly proportioned for rated conditions. Nozzle carefully reamed to produce smooth passage.

Motor Support — Rigid stream-lined with large openings for easy access to coupling and stuffing box. Top and bottom rings have rabbet fits for accurate alignment with motor and casing.

Pressure Switch — Double pole, equipped with thermal relay for overload protection. Starts and stops pump automatically at predetermined minimum and maximum pressures. Reset button incorporates a manual "on and off" switch.

Automatic Regulator — Maintains sufficient pressure on ejector supply line to operate jet. Consists of spring loaded valve and diaphragm. Fully balanced. Does not create back-pressure on pump. Manually adjustable for varying depths. *Built into the casing as part of the pump.*

Impeller — Fully enclosed type, one-piece bronze casting, dynamically balanced.

Pipe Slip Coupling — Compression type. Quickly and easily joins pipes without threads. Eliminates necessity for accurate lengths of connecting pipes.

Jet Body — Bronze casting with largest possible passages to minimize friction losses.

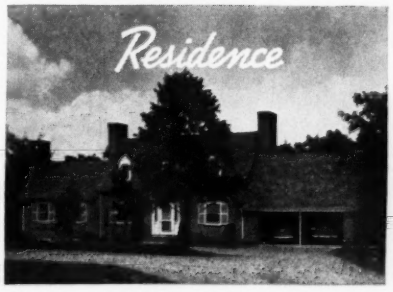
Foot Valve and Strainer — All brass combination foot valve and strainer has large water ways, but relatively small outside diameter to give maximum clearance between strainer and inside wall of well casing. Valve is faced with live resilient rubber. Wing guides prevent cocking or sticking.

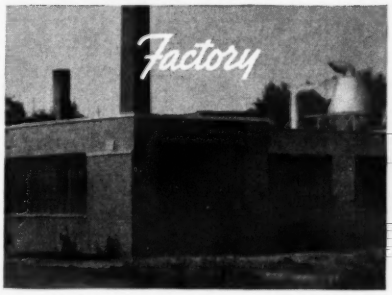
WRITE FOR THE ATTRACTIVE DEALER PROPOSITION ON THESE PUMPS

THE DEMING COMPANY • SALEM, OHIO

MANUFACTURERS OF DEPENDABLE PUMPS AND WATER SYSTEMS SINCE 1880

IT DOES A BETTER JOB IN EVERY TYPE OF BUILDING... *MONOFLO* HEATING



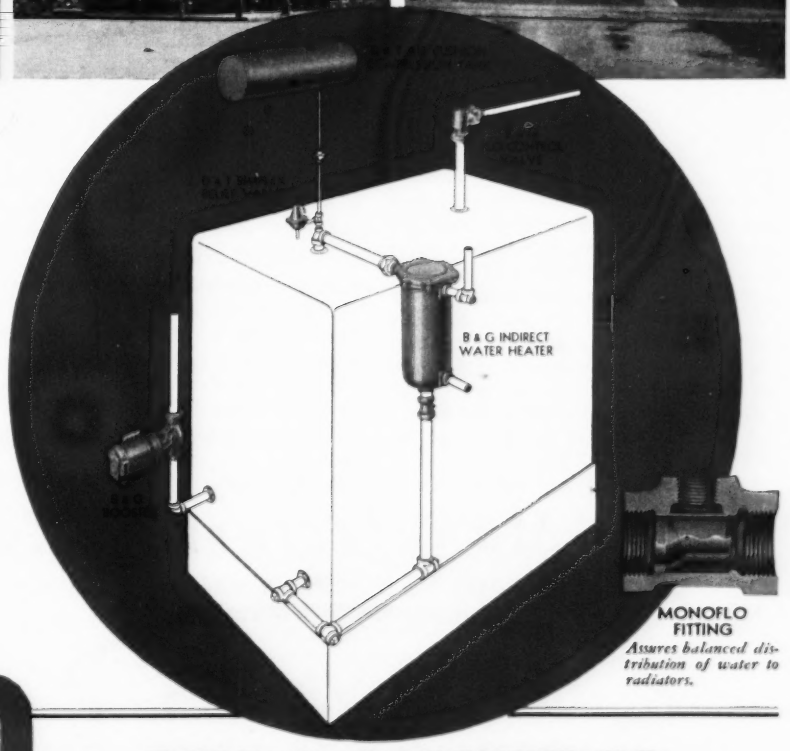


TESTED AND PROVED IN OVER 30,000 INSTALLATIONS

You can judge a heating system in two ways . . . by what is claimed for it . . . *and by what you see it actually doing in the field.*

Judged by over 30,000 installations now in operation, B & G Monoflo Heating is living up to every claim advanced for it. Its greater economy, more sensitive heat regulation, dependability and genuine comfort are substantiated in every respect.

Because of its ability to accurately control the heat supply, a B & G Monoflo Forced Hot Water System solves many heating problems never answerable before. It is equally at home in a modest residence or in an industrial plant requiring thousands of feet of radiation. Monoflo Heating offers you a selling story for radiator heat without parallel today. Thousands of contractors are finding it profitable—have you all the facts?



MONOFLO FITTING
Assures balanced distribution of water to radiators.

B&G

BELL & GOSSETT CO.

3000 WALLACE ST., CHICAGO

FORCED HOT WATER SYSTEMS . . . SERVICE WATER HEATING SYSTEMS . . . BOOSTERS . . . FLO-CONTROL VALVES . . . COMPRESSION TANKS AND RELIEF VALVES.

SEE YOUR REGULAR WHOLESALER.

SILENT KNIGHT OF THE HEATING SYSTEM

Slater

RADIATOR AIR *and* VACUUM BREAKER VALVES

TO get the most out of automatic heating, don't overlook the important part radiator air valves must play. To assure your customers faultless automatic heating performance at all times remember . . . the performance of the air valves must also be faultless. They must be particularly adapted to automatic heating requirements. For greatest comfort and complete satisfaction . . . for a perfectly balanced system . . . the VACUUM MUST BE BROKEN AT EVERY FIRING CYCLE.

In the SLATER DUAL FLOAT VACUUM BREAKER Valve these rigid requirements of automatic heating are met most faithfully. Incorporating in its design and construction an all-important vacuum breaking feature, the SLATER Valve makes possible more complete, balanced room temperatures . . . vastly improved heating results. Recommend SLATER Valves . . . INSTALL them on ALL radiators for greater heating satisfaction.

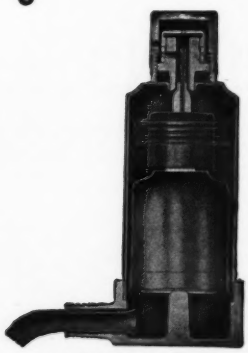
SEE YOUR LOCAL WHOLESALER!

Slater Manufacturing Co.

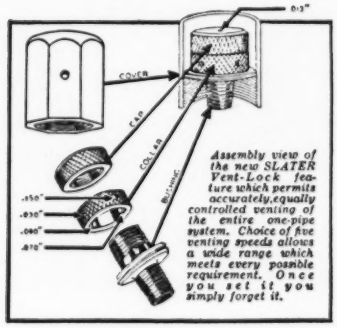
24 WATER ST., WAKEFIELD, MASS.

SLATER VALVES INSURE *Equalized Heat*

5 VENTING SPEEDS



No. 33 Vacuum Breaker Valve, Side Outlet 1/8"



Assembly view of the new SLATER Vent-Lock feature which permits accurately, equally controlled venting of the entire one-pipe system. Choice of five venting speeds allows a wide range which meets every possible requirement. Once you set it you simply forget it.

Slater

VALVES ARE BETTER VALVES

No. 2A. Vacuum Breaker Valve, Side Outlet 1/8"

No. 1A Non Vacuum Regulator Air Valve, Side Outlet 1/8"

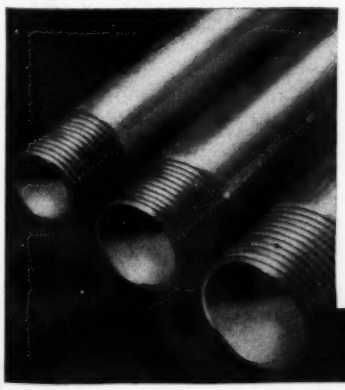
Slater has a valve for every need on the one-pipe steam heating system

WATER . . . or any other product which flows through a piping system . . . can be only as clean as the pipe. To insure cleanliness is a simple matter . . . use Fretz-Moon Pipe.

This modern pipe is as clean inside as outside. It is made of clean, scale-free steel skelp. The skelp is protected against contamination by slag or other foreign matter on the furnace bottom. After welding into pipe, specially-designed rolls remove any scale formed by heating to welding temperature. Each length of pipe is washed out by water under pressure. Galvanized pipe is blown clean by superheated steam.

Ask your jobber to show you a length of Fretz-Moon Pipe. Look through it. Notice how clean it is. Such cleanliness will insure full capacity flow, less opportunity for corrosion to gain a foothold and less chance of clogged valves or instruments in the piping systems you install. If your jobber doesn't stock Fretz-Moon Pipe, write us.

You can obtain Fretz-Moon Pipe in both standard and *extra long lengths*, in steel or copper-bearing steel, and in black finish or with a tight, non-scaling galvanized coating further protected by a coating of lacquer. *Write for detailed information.*



FRETZ-MOON TUBE CO., INC.
BUTLER · PENNA.

TRY FRETZ-MOON PIPE—AND KNOW THE DIFFERENCE

now the *Strong* link in the line

How much does the best pipe nipple you can buy amount to in money? A matter of pennies! But you measure the cost of an inferior nipple in dollars—when sooner or later the inferiority is demonstrated.

Top quality nipples are made by "National Association" Members—bonded to produce only nipples made of NEW pipe, *tested* for the strength which means that nipples are now *the strong link in the line.*

Whether your interest in nipples is as an installer or the owner of the installation, you will profit by "Association Nipples," *every* time you order. Write for folder and names of the manufacturers of nipples made from guaranteed new pipe.

GUARANTEED NEW PIPE NIPPLE — FULL WEIGHT MILL TESTED — NATIONAL ASSOCIATION OF PIPE NIPPLE MANUFACTURERS

NATIONAL ASSOCIATION OF PIPE NIPPLE MANUFACTURERS
PITTSBURGH, PENNSYLVANIA

SPECIFY AND BUY

Guaranteed New Nipples

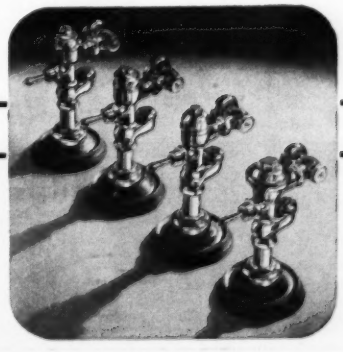
New! A SILENCING UNIT FOR SLOAN FLUSH VALVES

● Now you may obtain *completely quiet* operation of the world's finest flush valves—not only on new work, but on old installations which have become noisy from years of use.

● *Any* installation of Sloan Royal, Star, Crown, or Naval Flush Valves may be transformed to the new *Quiet-Flush* by the replacement of the present stop valve and the insertion of a new guide and seat in the flush valve. This easily accomplished change reduces flush valve noises to the faintest murmur. Sloan-equipped hospitals, hotels, apartments, offices or schools desiring noise abatement now have an economical solution to this problem.

● On new installations *Quiet-Flush* may be specified in all the styles and variations of the Royal, Star, Crown and Naval Valves.

● Sloan *Quiet-Flush* equipment is unlike any silencing device previously obtainable. It combines the best features of generally known methods with important contributions from Sloan research. Sloan value and efficiency are your assurance of the utmost in flush valves—*plus* utter quiet.



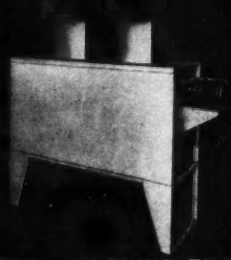
SLOAN VALVE CO. CHICAGO, ILL.

TRANE SETS THE UNIT HEATER PACE

TRANE

AIR^{n}

Unit Heaters



PROJECTION HEATER
Salvages Ceiling Heat

STANDARD PROPELLER TYPE
Quiet, efficient Spot Heating

TORRIDOR—BLOWER TYPE
Either belt or direct driven

Trane engineering knowledge, in collaboration with Architects, Engineers and Contractors, enables us to offer the greatest line of Unit Heaters.

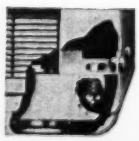
Trane manufactures a limitless variety of sizes and styles to meet your every requirement. Old-fashioned cast iron pipe coils and radiators—yes, and even ordinary unit heaters have passed out of the picture. Trane Unit Heaters, with their many advantages, are constantly broadening the field of unit heater application. Not only factories, and garages, but shops, offices, lunch rooms, dance halls as well. Any space is a prospect for some type of Trane unit heater. Only a line like the great Trane line can provide the exact type.

There are huge Trane Torridor Blower Type Units for the delivery of large quantities of heated air. There are Model "N" Propeller Type Unit Heaters which have solved heat problems in factories and commercial establishments the country over . . .

And, in the amazing Projection Unit Heater there is the most advanced development in years and years—for loss of heat, at ceilings, is now licked, and what was formerly wasted heat is put to work down at the floor level where it belongs.

The scope of installations of Trane Unit Heating Equipment is interesting information for every Engineer and Contractor. We urge you to write and ask for Unit Heater Bulletin No. S-327. In it you will find an answer for new building or remodeling requirements.

FAN
New 4 Blade Fan. Balanced and formed to eliminate noise due to air friction.



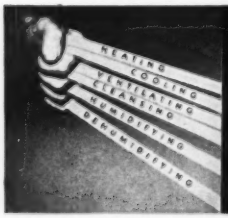
CRADLE COIL
(Cut-Away Section)
Showing how coil is spring cradled in casing. Eliminates all stress and strain due to expansion.

Because of the exclusive Trane feature known as "Balanced Pressure" Trane Traps will withstand extremely severe operating conditions. A rupture due to pressure differences is a physical impossibility with Trane Traps.

FLOAT TRAP
Equipped with the famous Trane balanced pressure thermostatic bellows that locks against steam and lasts indefinitely.

FLOAT VENT
Extra large air capacity through ¼-inch port. Float seals against water leakage. Bellows closes port against steam leakage.

BUCKET TRAP
Designed for use with Blast Coils, Unit Heaters or at low points on high pressure steam lines to clear condensation and discharge air.



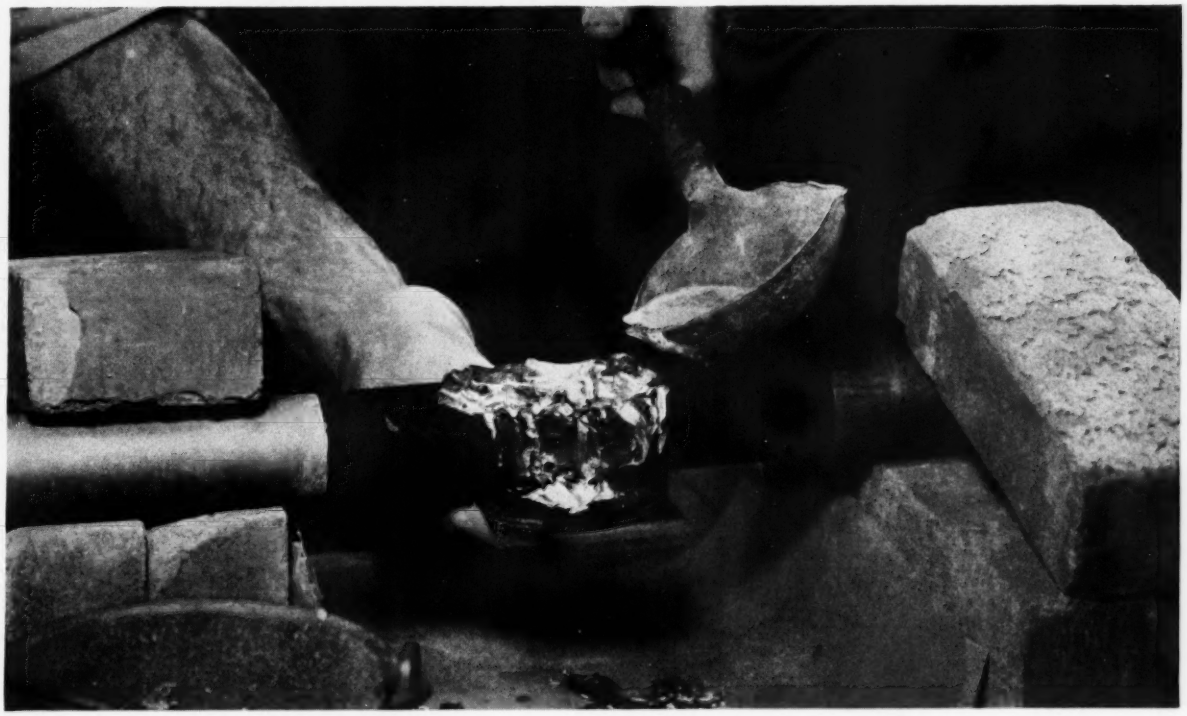
TRANE

THE TRANE COMPANY (AIR) LA CROSSE, WISCONSIN

Also TRANE COMPANY OF CANADA LTD., TORONTO, ONTARIO

Unit Heaters · Specialties · Convectors · Climate Changers · Cooling Coils · Unit Coolers · Blast Coils · Unit Ventilators

REDUCE YOUR OVERHEAD...



with SIMPLE LEAD WORKING TOOLS

You can install the finest, custom-built plumbing at regular prices by using lead. Overhead is less because there is no big investment in expensive tools and dies that must be kept in shape and replaced, no large stock of fittings, less storage space. Much work can be done under ideal conditions, too, in shop or on bench, spare time can be used for shop work, no material is wasted, costly structural reinforcement reduced, joints are fewer — all real savings. The job a craftsman does with lead is the finest—durable, flexible, compact, non-clogging, joints that can't loosen—custom-built because skill and a flexible material make it adaptable to every need and condition. And at no extra cost, too, the Seal of Approval assures highest quality material. If you are not receiving our helpful free magazine, PLUMBERS' FORUM, we'll be happy to add your name to our mailing list.

Insist on this seal...

SEAL OF LEAD INDUSTRIES' APPROVAL

It is your assurance that the rigid standards of purity, wall thickness and manufacture set by the Association have been met.

Use only lead pipe, traps and bends stamped with the "Seal of Approval."

It's your protection

LEAD INDUSTRIES ASSOCIATION, 420 Lexington Ave., New York, N. Y.

The following cooperating members are licensed to use the Lead Industries' Seal of Approval on their products:

Alpha Metal & Rolling Mills, Inc.
American Lead Corp.
The Andrews Lead Company, Inc.
Baker Lead Manufacturing Company
Bunker Hill and Sullivan Mining and Concentrating Company
Cambridge Smelting Company
Crown Metal Company
Division Lead Company
The Eagle-Picher Sales Company
Federated Metals Division of American Smelting & Refining Company
Gardiner Metal Company
General Lead Manufacturing Company
Georgia Lead Company
Gibson & Price Company
Morris P. Kirk & Son, Inc.
John T. Lewis & Bros. Company
Marks Lissberger & Son, Inc.
Master Metals, Inc.
National Lead Company
North American Smelting Company, Inc.
Northwest Lead Company
The North-Western Metal Mfg. Co., Inc.
White Metal Rolling & Stamping Corporation

REMEMBER—EVERY LEAD JOB IS A PLUMBERS' JOB

PLUMMER BROTHERS

MATT - WHAT CO-OPERATION DO YOU THINK WE SHOULD EXPECT FROM THE PLUMBING MANUFACTURER TO WHOM WE GIVE OUR BUSINESS ?
WELL - LET'S SEE - WE SHOULD EXPECT THESE SERVICES
WHAT MATT EXPECTED
Exclusive distribution through plumbing and heating contractors
Complete line of up-to-date products
National Advertising
Co-operation with the plumbing and heating contractors

In his notes, Matt has expressed what has been Crane's policy for years. For instance:

1. Crane Co. has never had any other form of distribution than through the Plumbing and Heating Contractor.
2. The Crane plumbing line is not only complete in all price ranges but contains many items which make it possible to meet unusual conditions. The Crane heating line is unusual in that it covers all fuels and all systems available from one source of supply.
3. This year, as in years past, Crane has carried a dominating schedule of sales building advertisements in national publications.
4. Crane Services mean real co-operation in building bigger sales. There's the Price Service, Home Desirable, Dealer Meetings, Imprinted Folders and Circulars, and Posters, to mention only a few.

CRANE

VALVES · FITTINGS · PIPE · PLUMBING · HEATING · PUMPS

CRANE CO., GENERAL OFFICES: 836 S. MICHIGAN AVENUE
CHICAGO, ILLINOIS

NATION-WIDE SERVICE THROUGH BRANCHES,
WHOLESALERS, PLUMBING AND HEATING CONTRACTORS

Easy BALANCING

Adds A New Selling Point To The Popular Appeal of Dole Valves

● *You* will understand, far better than most of your customers ever will, the real values that quick, short-cycle venting with the new Dole Vari Vent No. 1A Air Valve brings to automatically fired one-pipe steam systems—whether they burn gas, oil or coal.

But the comfort and economy this new device gives can be easily sold without trying to explain a lot of technicalities.

You Simply Sell Them EASY BALANCING

Anyone can understand that his heating system is not working right if radiators far away from the boiler take a long, long time to heat, while those close to the heating plant are fairly sizzling.

And it is not hard for your customers to understand that when Dole Vari Vents slow down the near-the-boiler radiators and at the same time speed up the far-away ones, then the system is "balanced." That's all you have to tell them—no need to emphasize that not until this year has the problem of venting automatically fired heating systems been really solved, with Dole Vari Vent No. 1A Air Valves. As long as you know that, you can now with confidence promise the advantages of a balanced heating system—the new comfort, convenience and economy that is so desirable.

The Sales Story is Now Simple

Balancing the heating system even with modern automatic firing is now *easy*. The big clearly marked dial of the Dole Vari Vent 1A with figures that actually measure the proportionate speed of venting, and the simple locking adjustment, are features that will almost sell themselves to your customers.

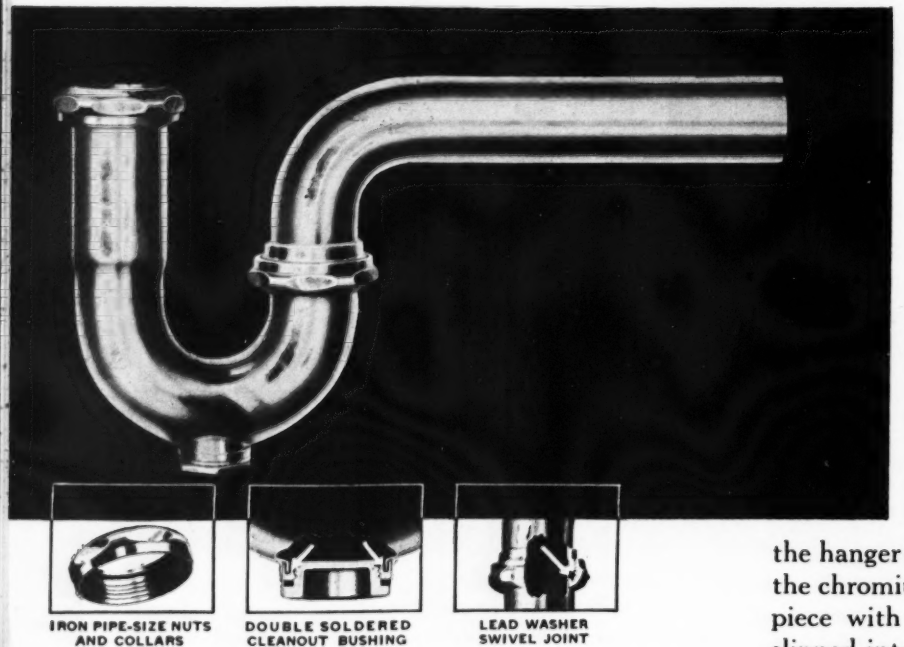
You know, of course, that the Dole line of Air and Vacuum Valves is complete for every type of one pipe steam installation. Be sure this year that you have Dole No. 4 and No. 5 Quick Vent Valves for the return mains and be ready to cash in on automatic heating business with the new Dole Vari Vent No. 1A Air Valves.

THE DOLE VALVE COMPANY

1901-1941 Carroll Avenue, Chicago, Illinois

Offices and Representatives in all Principal Cities

DOUBLE UP ON QUALITY
...use Scovill and M-VB



IRON PIPE-SIZE NUTS AND COLLARS

DOUBLE SOLDERED CLEANOUT BUSHING

LEAD WASHER SWIVEL JOINT

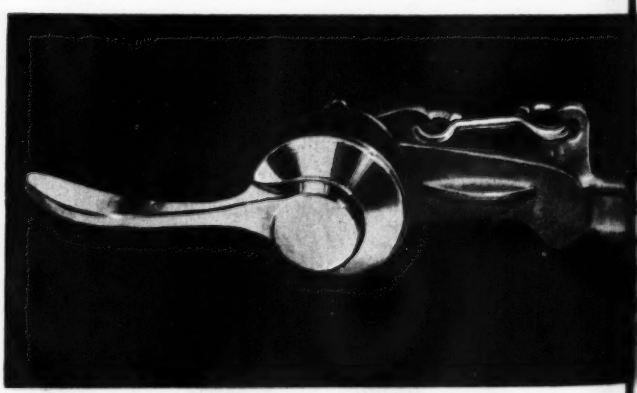
LEAD JOINT—The lead washer joint is easily made up by the plumber without wicking or dope. Because the washer is lead it will take all the punishment and cleaning compounds Mrs. Housewife can give it. What a salespoint!

The cleanout bushing is double soldered, too, to make it absolutely leakproof. The nut fits flush with the inside wall of the trap.

M-VB—A TRADEMARK PLUMBERS RECOGNIZE

This #38 tank lever is a Morency-Van Buren product. The handle is *horizontal* and does not interfere with the raised seats of compactly built closets.

A hexagon bushing inserted through the *front* of the tank and screwed into the hanger locks it in place. (No tools are used on the chromium-plated parts.) The handle, now one piece with the rosette and the handle stem, is slipped into position and a lift arm attached and secured by a cotter pin. The job's done.



M-VB No. 38 TANK LEVER

SCOVILL *Masters of Metal*

SCOVILL

SCOVILL MANUFACTURING COMPANY

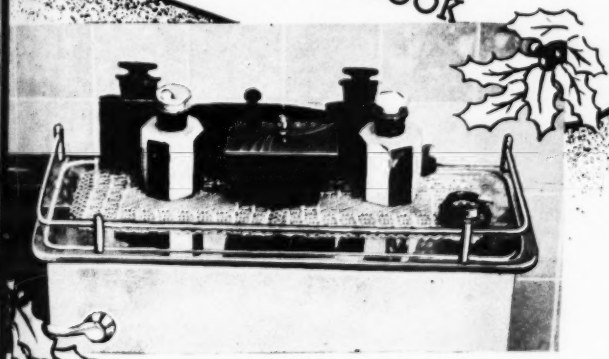
Morency-Van Buren division — Sturgis — Michigan

Waterville division — Waterville — Connecticut

M-VB'S AUTOMATIC HUMIDIFIER

Keeps water pan always at right level, protecting your customer's health, keeping him comfortable with less fuel. Installed in ½ hour without dropping fire. Four models, for any warm air furnace; cannot corrode.

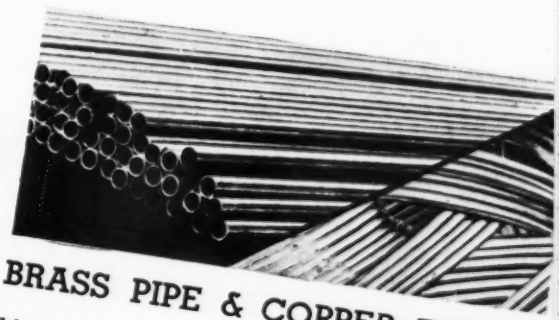
PLUMBER'S NOTEBOOK



FROM SANTA CLAUS

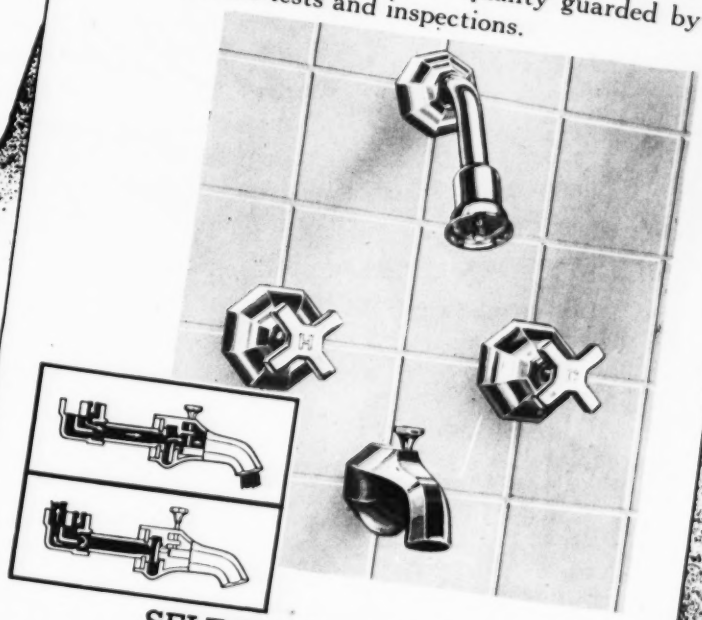
very home owner and apartment dweller you e able to do business with — needs this tank ver and can be sold on its practicality alone. s strong guard rail and flat top make it a per- ct place for all those bathroom items too cum- rsome to go in the medicine chest. Adjustable ction clamp assures perfect fit on all 6-gallon 8-gallon tanks (2 sizes). #5006 is 20¾" x 8". 000 is 23⅞" x 8¼".

To make this cover *easier* for you to sell . . . enable you to sell *more of them* . . . Scovill is ing to wrap it in a really Christmasy Christ- as-gift package. It's exactly the sort of "extra" esent a husband would give his wife — and en use himself! Cash in on this. Write to us for ee folders and make inquiries at your whole- le house at once.



BRASS PIPE & COPPER TUBING

Uniformity and highest quality guarded by constant tests and inspections.



SELF-DRAINING HEAD

When valves are closed in this new diverter (#J-1358-7), knob on spout drops *automatically*, water drains out of shower head, protecting the next user of the shower from left-over cold water. No springs or close-fitting parts to wear. Water pressure keeps knob up once it is raised. Otherwise all water goes through spout.

PLUMBER'S NOTEBOOK

Saves you time in selling, time in installing . . .

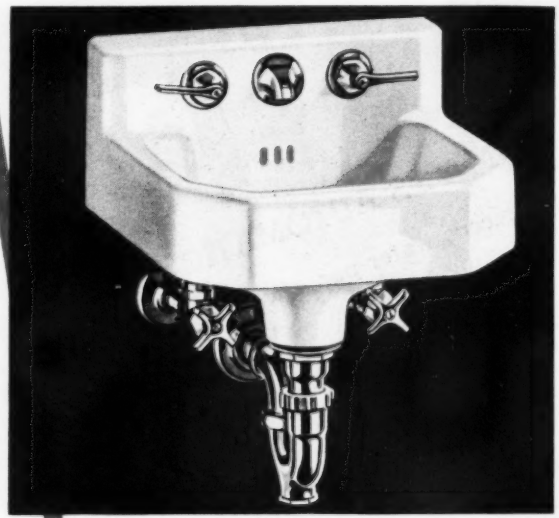
WE SELL ONLY TO QUALIFIED PLUMBING WHOLESALERS

GET IN STEP WITH THE NEW

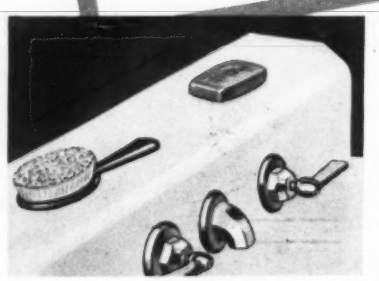
KOHLER TRAVELER LAVATORY

NEW POSSIBILITIES FOR

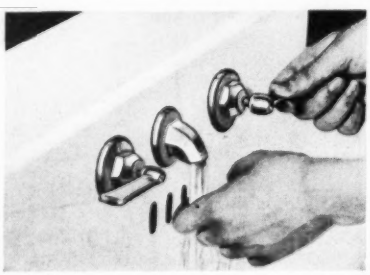
Sales



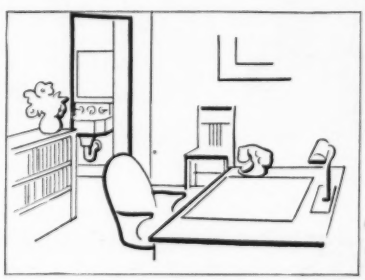
1 ANOTHER TRIUMPH for Kohler engineering is the Kohler Traveler—a small lavatory with big sales possibilities. Though only 13 by 13 inches, this little fellow is built with typical Kohler ingenuity and craftsmanship. Let's look at it more closely.



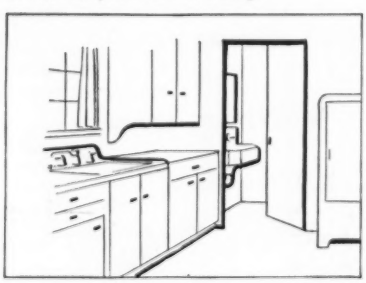
2 SPACIOUS 3-inch shelf provides ample space for toilet articles. Saves cost and space of separate shelf. Ample basin. And look at the compact built-in fitting!



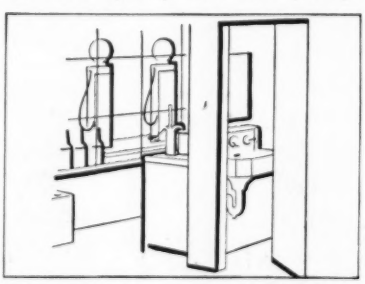
3 MIXING-TYPE fitting. Renewable seats. Graceful lines. Comfortable handles. Chromium plated. Open drain. Chain and plug available. Spout prevents back-siphonage.



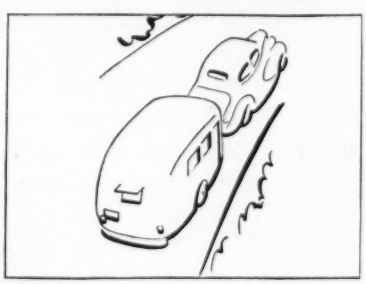
4 MANY unused corners are ready for the Traveler. In the private office it's a life-saver for a hurried-up grooming or before-lunch wash. Fine for small general washrooms.



5 EVERY KITCHEN can use this new Kohler ace. It's tops for a quick wash-up after cleaning or baking. The Traveler saves countless steps when no other lavatory is available on the first floor.



6 GAS STATION operators rate sanitation high. Every station needs two lavatories—two closets too! You won't find a better team than the compact Traveler and close-coupled Kohler Wellworth closet.



7 TRAILERS are naturals for the Kohler Traveler. Camps and cottages are also Traveler territory. Canvass your district for trailers and small buildings. Then watch Traveler sales jump, watch profits mount.

• The Traveler is Kohler's latest boon to Master Plumbers. This enameled cast-iron profit-maker has most everything that a larger, more expensive lavatory has. Its field is almost limitless. Get the Traveler in your showroom quickly. Write for further details. Kohler Co. *Founded 1873.* Kohler, Wis.

MANUFACTURER TO WHOLESALER TO PLUMBER. KOHLER FITTINGS FOR KOHLER FIXTURES

KOHLER OF KOHLER

PLANNED PLUMBING AND HEATING

ENGINEERING VISION

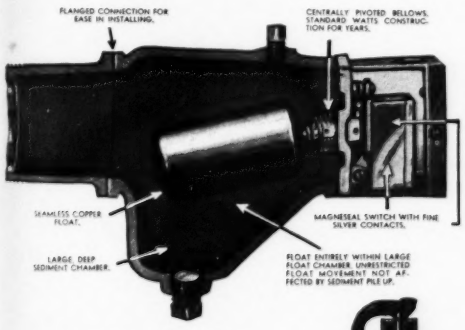
and integrity of manufacture...make the WATTS LINE GREATEST in its field

No. 99
Low Water Cut-off. Engineered for efficiency and service.

Compliments the Boiler.

Watts is not content to follow . . . Watts blazes new trails; originates new and advanced units and finds ways and means to manufacture and sell these better products at competitive prices.

Boiler Water Feeders; Low Water Cut-offs; Pressure, Temperature and Vacuum Relief Valves; Pressure Reducing Valves; Water Temperature Control Valves; Hot Water Heating Regulator Units; Systems and Circulators; Watts has them ALL.

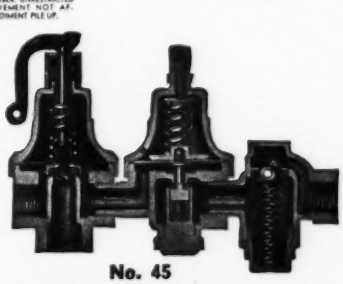

FLANGED CONNECTION FOR EASE IN INSTALLING.
CENTRALLY PIVOTED BELLOWS. STANDARD WATTS CONSTRUCTION FOR YEARS.
SEAMLESS COPPER FLOAT.
MAGNESEAL SWITCH WITH FINE SILVER CONTACTS.
LARGE DEEP SEDIMENT CHAMBER.
FLOAT ENTIRELY WITHIN LARGE FLOAT CHAMBER. UNRESTRICTED FLOAT MOVEMENT NOT AFFECTED BY SEDIMENT PILE UP.

No. 101 (Sectional View)
"Built-in Type" Low Water Cut-off. For boilers with 2½" pipe tapping. Note deep sediment chamber running under full length of float . . . an exclusive Watts feature.

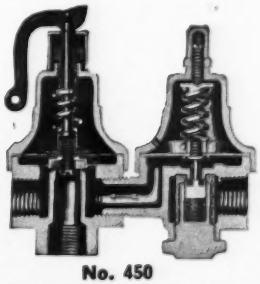
No. 40A
AUTOTHERM
Fully automatic (Self closing), Pressure, Temp., Relief Valve.

No. 20A
PRES-TEM-VAC
Pressure, Temperature and Vacuum Relief Valve.

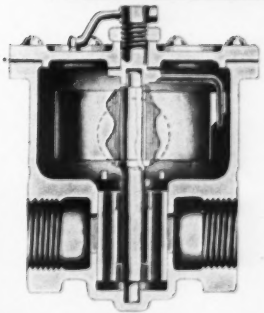
No. 30L
Diaphragm Type Pressure Relief Valve.



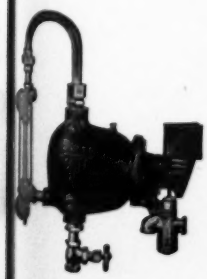
No. 45
Hot Water Heating Regulator Unit. A superlative unit for limited budgets.



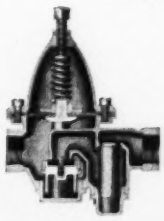
No. 450
Hot Water Heating Regulator. Low priced, quality unit.



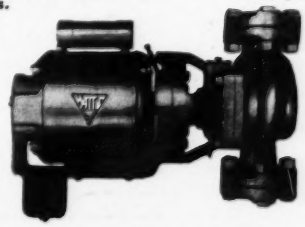
No. 71
TEMPERING VALVE
Adjustment range from 100° to 160° outlet water temp. Simple adjustment.



No. 60LW
Boiler Water Feeder and Low Water Cut-off.



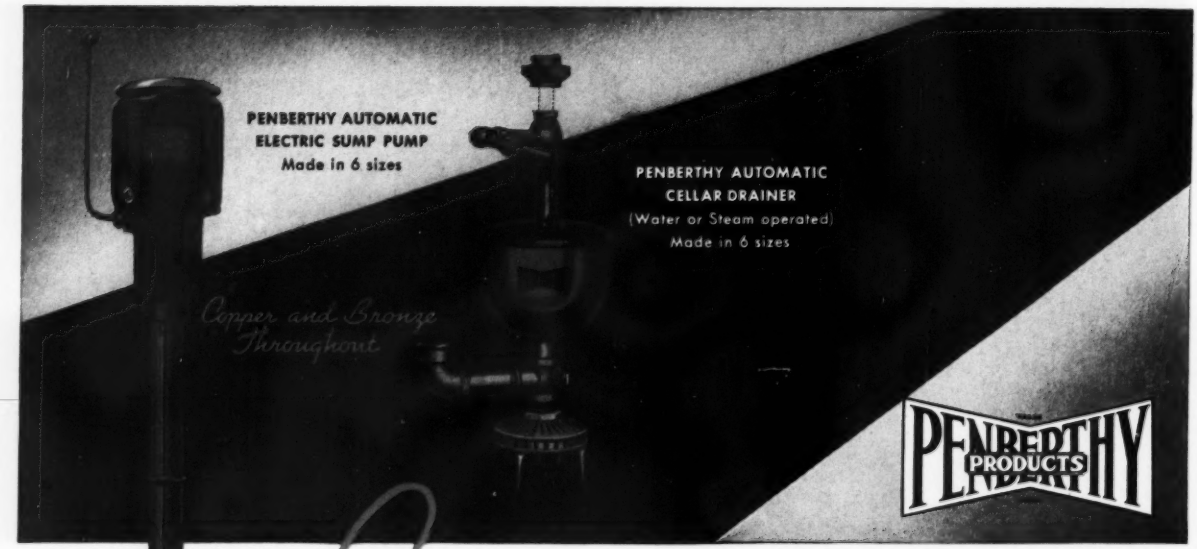
No. 135
Pressure Regulator with Strainer. Accessibility stressed.



No. 1470 CIRCULATOR
Maintains a forced circulation system with uniform room temperatures. Quiet. Smooth running.

WATTS REGULATOR CO.
Lawrence, Mass.

BUY FROM YOUR LOCAL WHOLESALER

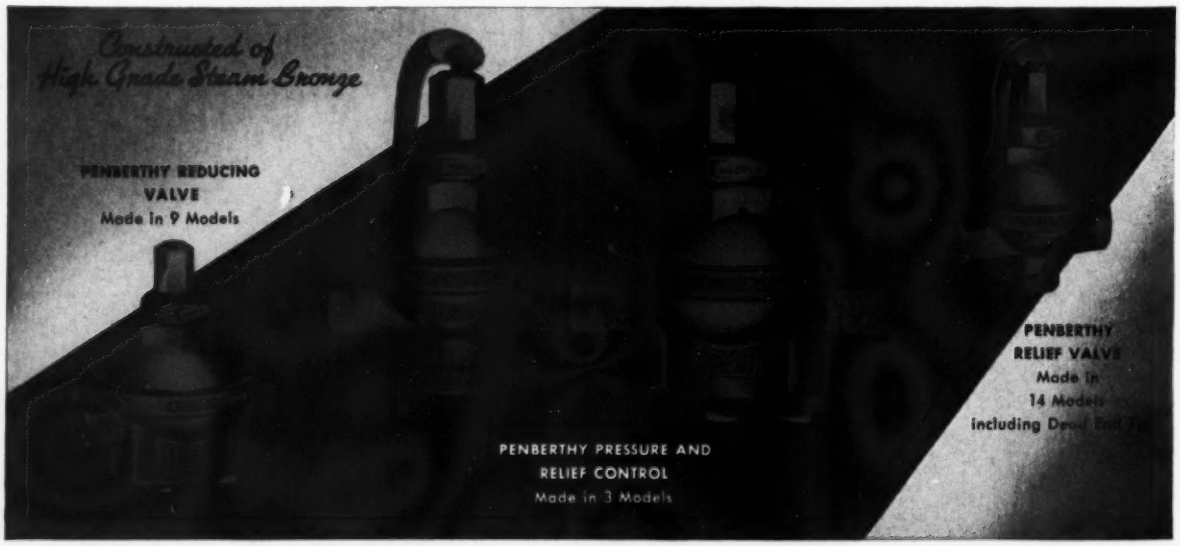


Thrifty

BOTH you and your customer benefit when you sell him one of the units shown above to keep his basement free from seepage water—or the specialties shown below to modernize his hot water heating plant. Your customer gets a superior product at an attractive price and you get a substantial profit from a line that is easy to sell and stays sold.

Penberthy Products are carried in stock by jobbers everywhere.

PENBERTHY HOT WATER HEATING SPECIALTIES



PENBERTHY INJECTOR COMPANY

Manufacturers of QUALITY PRODUCTS *Since 1886*

DETROIT, MICHIGAN • *Canadian Plant,* Windsor, Ont.

Thanks:

"I enclose my renewal for two years. DOMESTIC ENGINEERING has some good ideas for the contractor.. . . ."

F. S. M.

Between Ourselves

Ideas and Ideals . . . which make up . . . this Issue

Labor and Material

"On the whole, the information thus far published in a series of articles entitled, 'Labor and Material' is excellent and fills a long felt need." This comment from one of our readers, which is typical of the reception being accorded these articles prompts a brief outline of what is to come.

The information presented thus far, including that which is found in this issue, consists largely of tabular data on the amount of labor and material required for specific types of installation. Starting next month the application of this material will be illustrated by numerous examples of actual jobs which show how estimates may be prepared from architect's blueprints and engineer's drawings.

The concluding article of the series will outline methods for summarizing the various factors included.

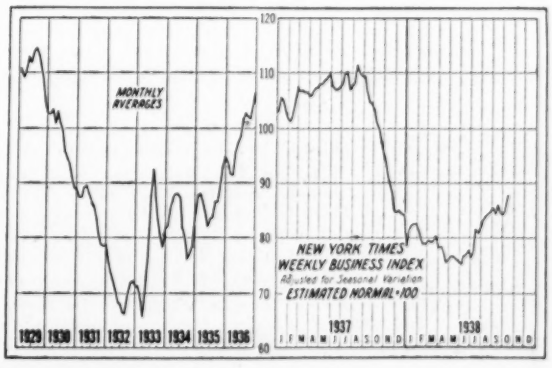
One of the questions frequently asked about this estimating data is, "How accurate are estimates made according to the system outlined?" It is impossible to make any categorical answer to this question since many purely local factors are involved such as overhead, haulage, type of excavating necessary, profit margin and many others. For those, however, who agree that "the proof of the pudding is in the eating," the tabulation, on page 44, of jobs actually estimated according to the system outlined will provide the best answer to this question of accuracy. Particularly significant is the close agreement between the figure obtained with this method and the average of all bids submitted, when compared with the wide range of bids on most of the 21 jobs. It is obvious that the extremely high bids will fail to win contracts and the extremely low bids will secure contracts involving serious risk of loss to the contractor. The soundest estimate lies between these extremes somewhere near the average.

Automatic Heat

The technical aspects of air conditioning and heating are in many ways similar. Heat loss and heat gain calculations, ventilating, humidifying and dehumidifying are all subdivisions of the broad field of comfort conditioning. Furthermore, the similarity of the physical process involved leads to similar mathematical processes in the solution of the problems involved. In an effort to systematize and simplify all conditioning calculations, DOMESTIC ENGINEERING has presented two continuing features—one on Graphic Air Conditioning and another on Automatic Heat. Both of these series stress the elimination or minimizing of mathematics by substituting graphs from which the required data may be read directly; each series when completed will constitute a complete text of the subject. This month's articles on these important subjects appear on pages 40 and 52.

Business Is Much Better

The index of business shown in the accompanying chart demonstrates most forcefully the basic condition of business in the United States at this time. It will



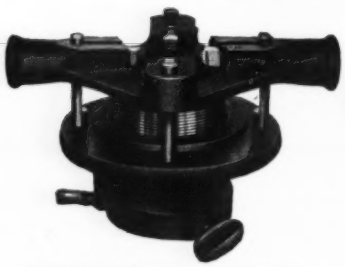
be noted that the curve is considerably above the highest point of any time during the year. Predictions that business would rebound sharply following the war scare have proven themselves.

Indicative of business in general, this curve takes into account such factors as car loadings, electric power production, steel ingot, automobile production, cotton mill activities and lumber production. It is adjusted for seasonal variations.

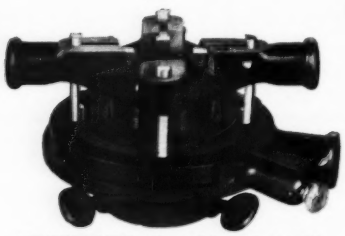
Your Editor

"TOLEDO" OLD-TOOL CONTEST

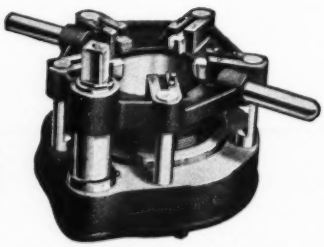
If you have any old "TOLEDO" No. 1, No. 1A or No. 2 Tools you may have a prize winner.



"TOLEDO" No. 1—1" to 2"
PLAIN ADJ. PIPE THREADER



"TOLEDO" No. 1A—1" to 2"
RATCHET ADJ. PIPE THREADER



"TOLEDO" No. 2—2½" to 4"
GEARED ADJ. THREADER

"TOLEDO" pipe tools have been on the market for over thirty-five years, and because of their strong, durable construction many of these early tools are no doubt still in use. Only a few days ago a "TOLEDO" No. 2 tool that had been in use since 1907, or for 31 years, was returned to us for repairs.

We now give these "TOLEDO" old tool owners an opportunity to cash in on these old tools and receive liberal cash credits to secure new "TOLEDO" tools without cost, and which they will find will give them just as satisfactory service as the old tools they have been using.

READ THE CONTEST RULES. THEN
SEND US NAME PLATES FROM YOUR OLDEST "TOLEDOS."

1. Any genuine "TOLEDO" No. 1, No. 1A and No. 2 tool that is now in actual use may be entered.
2. "TOLEDO" No. 1, No. 1A and No. 2 model tools were the first "TOLEDOS" in use and only these tools can be entered.
3. Name plates should be removed from the tools and mailed to us with a letter which plainly shows writer's name and address and tells us your opinion of "TOLEDO" tools.
4. Each name plate will have the serial number carefully checked by us in order to locate the tools in our records, and to determine exactly when the tools originally left our plant.
5. Owners submitting the oldest name plates will win the following prizes.

Oldest No. 1 Tool	First	Prize	Credit	$50.00
Second Oldest No. 1 Tool	Second	"	"	$25.00
Third Oldest No. 1 Tool	Third	"	"	$15.00
Oldest No. 1A Tool	First	Prize	Credit	$50.00
Second Oldest No. 1A Tool	Second	"	"	$25.00
Third Oldest No. 1A Tool	Third	"	"	$15.00
Oldest No. 2 Tool	First	Prize	Credit	$50.00
Second Oldest No. 2 Tool	Second	"	"	$25.00
Third Oldest No. 2 Tool	Third	"	"	$15.00

These prizes are credits, which will be forwarded to the prize winners and which will be honored by any "TOLEDO" Distributor for the amounts above stated to apply on the purchase of new "TOLEDO" tools. In the case of a tie duplicate prizes will be awarded.

6. Every contestant sending us his name plate agrees to allow us to use his name, letter and picture in our advertising.
7. An owner may submit No. 1, No. 1A and No. 2 name plates and enter tools in each of the three classes if he desires.
8. CONTEST CLOSES AT MIDNIGHT, THURSDAY, DECEMBER 15, 1938. ALL ENTRIES WITH NAME PLATES MUST BE POSTMARKED NOT LATER THAN THIS DATE. PRIZES WILL BE ANNOUNCED AND AWARDED DECEMBER 23, 1938.

THE TOLEDO PIPE THREADING MACHINE COMPANY
TOLEDO, OHIO **NEW YORK OFFICE: 72 LAFAYETTE ST.**

ALWAYS THE MARK OF FINE "TOLEDO" PIPE TOOLS AND PIPE MACHINES.

OUR INDUSTRY

November, 1938

Wage-Hour Law

THE Federal Wage-Hour Law is a reality. It went into effect on October 24. As in the case of all new laws, there is much speculation as to how its provisions will be interpreted and what effect they will have upon those to whom they apply. Unlike many laws, interest in this legislation, almost universally is at a high pitch because of the broadness of its implied as well as actual significance.

The direct effect of the law upon plumbing and heating contractors probably will be very slight inasmuch as the basic provision at this time is that an employee shall not be paid less than 25 cents per hour and his regular work week may not be more than 44 hours, beyond which the employee must receive overtime remuneration at 1½ times the regular rate. Prevailing wage scales in the plumbing and heating industry are far in excess of these minimum provisions. Payment for overtime work certainly is no novelty. If there are any isolated cases where substandard conditions have been in effect, our industry as a whole welcomes improvement.

With practically no possibility for contradiction, it can be stated that the Wages and Hours Law will have little if any *direct* effect upon our industry.

The *indirect* results are something else. In practically all discussions of the Wages and Hours Law during the last several days, there is apparent the suggestion of a condition which may develop to proportions far overshadowing any direct effects of the legislation. Employers who are inquiring as to what the new rules of the game called business mean and how they should conform to them are being counseled, "keep records of wages and hours for your own *protection.*" On the surface, this is exactly what any businessman normally would do. However, the disturbing element here is the thought that it may be necessary for employers to protect themselves from their employees. It is true that in some industries employees need protection from employers. It is equally true that in some other industries employers need protection from employees. It certainly is not true that in all industries employees and employers need protection from each other.

By far, the greater proportion of genuine successes enjoyed by American businesses have been founded upon mutual trust, respect and cooperation between employees and employers. Success as our business system knows it, is not possible on any other basis.

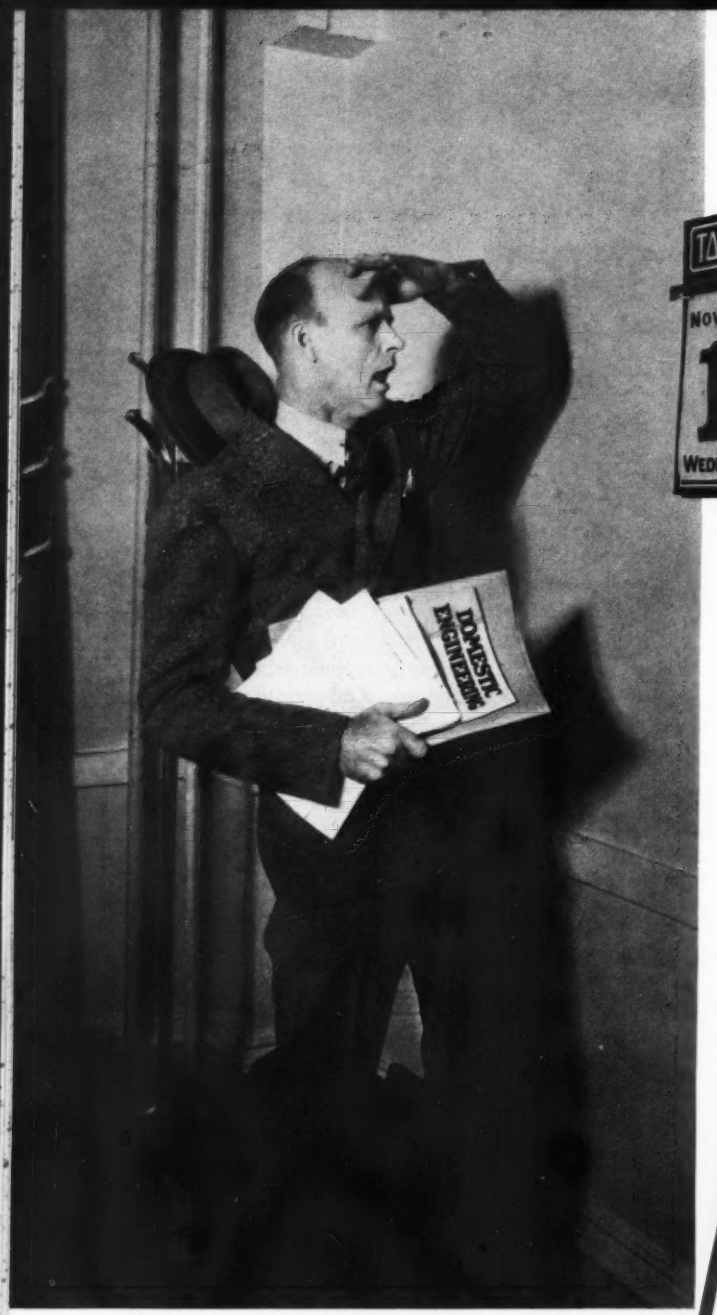
The direct effect of the Wages and Hours Law upon our industry probably will be very slight. The indirect effect, as suggested here, is something which all members of our industry, employers and employees alike, in cooperation with other industries, should do everything possible to reduce.

Don't Hesitate

Some potential winners of the motor truck which is being given as first prize in DOMESTIC ENGINEERING's contest to build business for the plumbing and heating industry have suggested that they believe their chances in the contest are limited. For instance, one contractor-dealer has written to say that, "Since I am located in a small town, I do not expect to win a prize." The measuring stick by which the judges will determine who will be successful is not being influenced by such considerations as the volume of the contestant's business or where he is located. Instead, the chief consideration will be the soundness, originality and the effectiveness of the business building methods pursued.

Wm. M. Byrd, Jr., President, Plumbing and Heating Industries Bureau, George H. Dickerson, President, Heating Piping and Air Conditioning Contractors National Association and George E. Hoffman, Vice President, Crane Company, are the men who will serve as judges. Their background in the plumbing and heating business, their understanding of the problems facing contractor-dealers now and the sincere interest of all who are identified with this contest, to discover the most effective means for increasing plumbing and heating business today, should encourage all business building contractor-dealers to submit their tested ideas. November 15 is the closing date. Prize winning ideas and methods will be featured in succeeding issues of DOMESTIC ENGINEERING. In effect, these editorial columns will serve as a clearing house of information on the best methods now being used in building business. Nineteen contestants will win actual prizes. Our entire industry will profit by the result.

DON'TS—



Here is a picture of one man who won't win a prize. He prepared a careful entry for DOMESTIC ENGINEERING'S Business-Building Contest but was left standing at the post because he overlooked the closing date, November 15, 1938

COULD you use a brand new panel body delivery truck? Then don't fail to send in your entry for DOMESTIC ENGINEERING'S Business-Building Contest. Could you use $200 worth of merchandise, or $100 worth or even $10 worth? Then gather together all the evidence of your business-building activities—advertisements, photographs, pamphlets, etc., etc.—and send them to the Contest Editor, DOMESTIC ENGINEERING, 1900 Prairie Ave., Chicago, Illinois. Don't assume that you have no chance of winning; you have. Remember this is an exclusive contest open only to plumbing contractors, heating contractors and plumbing and heating contractors; the field is limited and your chance of winning thereby improved. And while we are on the subject, here are a few don't's" which may help you to win:

1. Don't fail to get your entry in the mail before midnight, November 15, 1938.
2. Don't hesitate to write for more information if it will help you in entering.
3. Don't assume that your chances are limited by the size of your business or your location. The sole criterion upon which the judges will select winners is the ingenuity displayed in building business.
4. Don't make your entry too brief—the details of any successful plan for promoting business are important and should be included.
5. Don't underestimate the value of photographs as a means of illustrating your Business-Building activities; one picture tells as much as a large number of words.

FORMER WINNER INTERVIEWED

In 1935 DOMESTIC ENGINEERING sponsored a Business-Building Contest similar to the present one. The first prize, then as now, was a panel body truck which was won by an Escanaba, Mich., contractor-dealer named James P. Degnan. In a recent interview, Mr. Degnan reviewed the benefits of participating in such all-industry contests—even for those who win no prize. The substance of the interview is reproduced below.

Q: What is your name, address and occupation?

A: James P. Degnan. I am a partner in Moerschel & Degnan, plumbing and heating contractor-dealers of Escanaba, Mich.

Q: Is it true that you won a motor truck in a prize contest about two years ago?

A: Yes, it was the first prize in DOMESTIC ENGINEERING'S second FHA contest.

Q: Was that a similar contest to the one that closes November 15?

A: It was along the same general lines, yes. This year's contest is broader than the former one and offers contestants a wider range of possibilities from which to select material for their entries.

Q: Be honest, don't you think you were pretty lucky to win in that last contest?

A: I'll admit I was fortunate, but after all DOMESTIC

for Contestants . . . .

"Don't Delay!" heads list of last minute hints for contest entrants

ENGINEERING's contest is confined to plumbing and heating contractor-dealers. As I see it, only the most enterprising group of contractor-dealers do enter, so it isn't like some of these national contests where your chances of winning any prize are about 1 in 10,000,000.

Q: Has the truck which you won, helped you in getting new business?

A: Very definitely. It has been a real advertisement for me. We had a brass band and parade to welcome it when it arrived.

Q: It must have taken a lot of work on your part to win. Personally I don't see how you had enough time to take care of your business and get in the contest too.

A: It's true you don't get anything for nothing, but it took less work than you think to prepare my contest entry. After all, the only thing I had to do was write a detailed outline of my efforts to improve my own business. In other words, all I had to do was sit down and take inventory of how I go about making a sale.

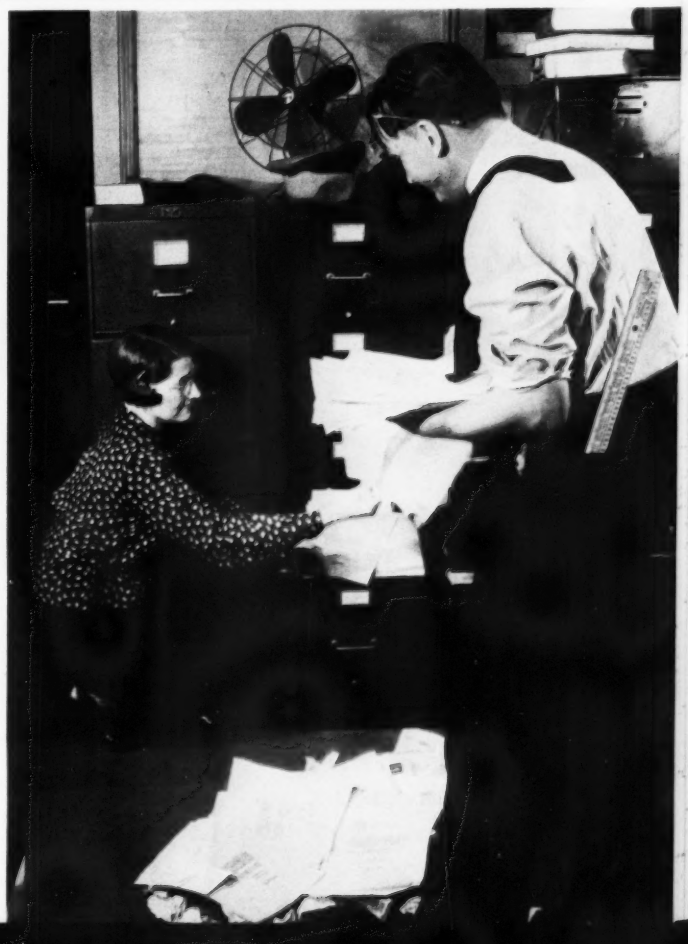
Q: Evidently it was worth the effort then.

Here's another man who won't win a prize. He is going to prepare his entry tomorrow, one of those tomorrows that never seem to arrive

A: You bet it was. Even if I hadn't won a prize, entering the contest got me thinking about the business and how it was run. As a result we were able to make several economies. There are only 20,000 people in Escanaba, but running a business efficiently here is just as important as it is in a city like New York where there are 350 times as many people. And it helps to sit down with pencil and paper and figure out just how thorough a job you are doing to turn your own potential market into actual sales and contracts.

Yes, I certainly think it was worth the effort and to prove it, I'm working now on my entry for this contest.

The man below may win a prize, but the chances are against him; he has one of those "human nature" filing systems which are very convenient because you can put almost anything in them. When it comes to extracting material for such things as contest entries, however, the system gives up with a sigh. The resourceful gentleman shown has a simple solution, however; he is simply throwing away everything he can't use in the entry. This should solve the filing problem for all time



FORTY-THREE DO'S—

"Want'a win a truck?" Fill out the contest blank and mail entry now

LAST month the first part of a list of sales aids compiled as the result of interviewing 500 contractor-dealers in our industry was published. Some of these plans are well known and widely used. Others have been developed for the first time by the contractor-dealers interviewed. Some of them are generally applicable; some have been evolved for special needs, special markets or a particular type of business. But the important thing is that each of the ideas outlined is building business for some member of our industry. Here are some more:

Billboard ads—are being used successfully by dealers pushing heating equipment. Similar ads stressing plumbing also pull well.

Program advertising—brings results from community entertainments or small town engagements. Rates are generally low.

Blotters, calendars, etc—have been used by plumbing and heating contractor-dealers for years. Their continued use is evidence of their value.

Specialty ads—such as puzzles or tiny gifts with company imprint, are limited in their appeal only by the ingenuity used in their selection.

Cooperative advertising—gives to smaller dealers an opportunity to cash in on bigtime promotion. This idea is in use in numerous cities.

Telephone directory ads—are bread and butter for most city dealers going out for repair work. Such ads are on their "must" list.

Direct mail—is used for most collections and is a big factor in city sales drives.

Hand bills—are still used successfully in smaller municipalities. Such bills are reported to pull best when making a concrete and attractive offer.

Stuffers—for inclosing with statements are economical and unoffensive. Some dealers include them with all letters.

Publicity releases—in local papers, prepared by contractor-dealers, educate the public on the need for sanitation.

Truck signs—are an attractive form of advertising and are concentrated effort because they circulate only in the dealer's working area.

Firm name on uniforms—adds to business-like appearance of the men, publicizes the company name and adds uniformity.

Signs on construction jobs—have become a law requirement in at least one state and are coming into more common use among contractor-dealers.

Personal cards—clinch the contact, perpetuate the company name and offer a simple form of advertising.

Dealer name plates on installations—cost little and offer permanent publicity. Customers know who to call when later service is desired.

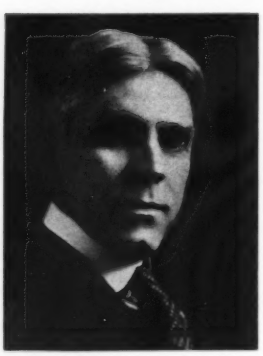
Home show displays—have more than paid for themselves on numerous occasions, besides advertising benefits.

Old bid records—come in handy when unlet jobs suddenly come to life. Many dealers preserve them.

Window displays—offer effective advertising at

George Dickerson

George Hoffman



William M. Byrd, Jr.

Judges

These men are well qualified through long association with the plumbing and heating industry to serve as contest judges. Mr. Hoffman is vice president of Crane Co.; Mr. Byrd is president of Plumbing and Heating Industries Bureau, and Mr. Dickerson is president of the Heating, Piping and Air Conditioning Contractors' National Assn.

for Contestants . . . .

small cost and bring particularly good returns in areas with heavy sidewalk traffic.

Showroom displays—enhance the prestige of the dealer, stamp him as an aggressive merchant and offer a ready place for sales demonstration.

"One hour service"—is an attractive feature for dealer advertising. Some dealers even list the telephone exchanges from which callers may expect such service.

Old customer files—are often negelected, but will usually reveal live prospects if combed at intervals.

Reputable merchandise only—is handled by dealers building up a stable business. Most dealers say off-brand merchandise doesn't pay in the long run.

Contests—such skill competitions make good window attractions and are usually very effective attention getters.

New prospect files—have become almost a necessity in selling. Time to call back, installation wanted and all similar information is kept by such records.

Installation photographs—are good sales material, especially if prepared in book form.

Sales from civic contacts—including membership in clubs and city enterprises, account for the wide contacts and big volume of many dealers.

Shop on wheels—idea has become a practical means of offering a one-call service with consequent saving in expense.

Time payments—offer added prospect incentive, especially on larger jobs. Present long term finance plans make time selling particularly easy and attractive.

Twenty-four hour service—is based on the principle that when a plumber is called, he is often urgently needed. Such service upholds the plumber's professional position.

Specialties as side lines—help dealers pick up drop-in trade. Appliances and automatic heating equipment are in common use as floor-traffic pullers.

Small parts counters—aid the dealer in checking

(Continued on Page 88)

PRIZE CONTEST ENTRY BLANK

Complete the following sentence with as many or as few words as you choose:

I am building plumbing and heating business for myself by _____

Check the items below which describe your methods. Send us copies of any photographs, ads or other evidence of your Business-Building efforts. You may explain your methods on a separate sheet of paper if desirable. Tell what results you have produced. Your enterprise and ingenuity in securing new business will be the determining factors in awarding prizes.

I use the following Business-Building aids:

- ☐ Newspaper ads
- ☐ Telephone directory ads
- ☐ Blotters, calendars, etc.
- ☐ Direct mail material
- ☐ Throw-aways
- ☐ Salesmen
- ☐ Telephone solicitation
- ☐ Old customer files
- ☐ Friends of satisfied customers
- ☐ Special follow-up system
- ☐ Journeymen leads
- ☐ Special collection methods
- ☐ Seasonal campaigns
- ☐ Club affiliation contacts
- ☐ Cold canvass
- ☐ Home show displays
- ☐ Truck signs
- ☐ Installment financing
- ☐ 24-hour service
- ☐ **Specialties as side-line leaders**
- ☐ Community advertising
- ☐ Shop on wheels
- ☐ Repeat business
- ☐ Modern estimating
- ☐ Relation of plumbing to health
- ☐ Small parts counter
- ☐ Modern bookkeeping
- ☐ Modern filing
- ☐ **Sales presentations**
- ☐ Building report leads
- ☐ **Contacts with contractors of other trades**
- ☐ Showroom photographs
- ☐ Show window photographs
- ☐ Installation photographs
- ☐ Before and after photographs
- ☐ Truck photographs
- ☐ Shop photographs

It is not necessary to use this entry blank to win a prize. It is offered merely for your convenience in suggesting the type of information which might be included in your entry; you may write on your business stationery or on plain paper. Send your entry to CONTEST EDITOR, DOMESTIC ENGINEERING, 1900 Prairie Avenue, Chicago, Illinois.

Your Name ..... (Type or Print)

Company Name ..... **City** ..... **State** .....

Address .....

Before

Exterior of the old Spreckles Building in downtown San Francisco as it appeared before the extensive remodeling program was carried out. Note the "gingerbread" architecture and the outmoded dome which added nothing to income

Visible evidence of the improvements made in this office building's plumbing are the new water closets, completely renewed and ventilated restrooms. According to the reasoning of the owners, "no modernization can be complete as long as any equipment remains which, by its style, denotes age." Results have proven their reasoning sound

Profit in Remodeling

"GOOD looking new office building," remarked the visitor to San Francisco, his gaze roving admiringly to the tip of the sleek, 21-story structure whose set-back architecture streamlines the corner of Third and Market streets.

"That's what *you* think," chuckled the native San Franciscan. "It isn't new at all. Believe it or not, it's the same old Claus Spreckels Building, at heart; but it has been so completely remodeled that they even had to modernize the name to suit the architecture, and it is now called the Central Tower."

Central Tower is an outstanding example of the exterior and interior transformation of a building, accomplished through the total elimination of every detail that smacked of yesterday, presenting in their stead the very newest aspects—all modern as the morn. As if this were not enough, the dome of the old building, a massive, highly ornamented affair set off by four classic turrets at its broad base, went the way of all things outmoded, to be replaced by six complete stories of new office space.

Properly to round out the program of modernization, all plumbing fixtures were replaced with new ones, from top to bottom. Summed up in brief, Central Tower is to all intents and purposes, a new building.

As it stands today, all plumbing fixtures have been renewed as far as the 14th floor; from there on up, throughout the newly constructed top floors, everything is new, of course, including the pipe. Altogether there are 40 new toilets, 20 urinals, 20 lavatories, 260 basins for individual offices and seven slop sinks for janitors' use. New hose reels have been supplied throughout, served by five-inch supply lines.

There are 20 rest rooms, with men's and women's rooms on alternate floors. The typical men's room, spacious and airy, includes two toilets, two urinals and a lavatory. All rest rooms are provided with a complete change of air every four minutes; this is accomplished through 12 in. x 12 in. grills leading to a 30 in. trunk-

These modern urinals are served by a piping system which was thoroughly checked with modern standards. Replacements were made wherever necessary, with all new piping for the top seven floors. "After all, plumbing is the heart of any structure, and the success or failure of that structure will depend largely upon the success or failure of its plumbing"

As modern as day-after-tomorrow — streamlined effects and pleasing lines transform an ugly duckling. Equally important are the hidden transformations in plumbing and heating which contribute their share toward increasing net income more than 100 per cent

After

Plumbing and heating modernization matches completely remodeled exterior

line extending from the basement to the penthouse.

Two systems provide hot and cold water and steam heat. One serves the first fourteen floors, the other from the fifteenth to the twenty-first. They follow the plan of the so-called attic type of distribution. The old plant consisted of two low-pressure steam boilers and an 800 gal. hot water storage tank; this plant still serves the first fourteen floors. For the additional seven floors, the existing steam plant is still suitable, but it was necessary to install an additional hot water storage tank of 425 gal. capacity, to take care of the top floors. The hot water system is of the return design which provides hot water instantly at every tap, this being one of the prime considerations affecting office building occupancy.

The heating system from the fourteenth floor to the top is served by a 5 in. main with a return to the vacuum pump in the basement. On the top seven floors each floor has 725 sq. ft. of radiation, or 5,075 sq. ft. for the seven floors. Radiators are installed on the outside walls of the building as all offices are exposed. The old heating system up to the fourteenth floor was found to be in excellent condition, and was accordingly left as it was.

Two 1,500 gal. storage tanks were installed on the roof under cover of the penthouse. Besides providing cold water for all fixtures in the building, these tanks also supply water for a 3 in. hose line. To meet requirements of the San Francisco plumbing code, four leaders were installed from the roof at the twenty-second floor level, connecting with the storm sewers at the street.

The plumbing contractor was Frank Davison, Ltd., San Francisco operator since 1913. When the then Claus Spreckels Building was partially remodeled and refurnished for the Panama Pacific Exposition in 1915, Mr. Davison also handled that job. Today, as the Central Tower, this structure not only adds a modern note to downtown San Francisco's architectural theme, but embodies in dramatic fashion the possibilities—and profit.

(Continued on Page 93)

Automatic Heat

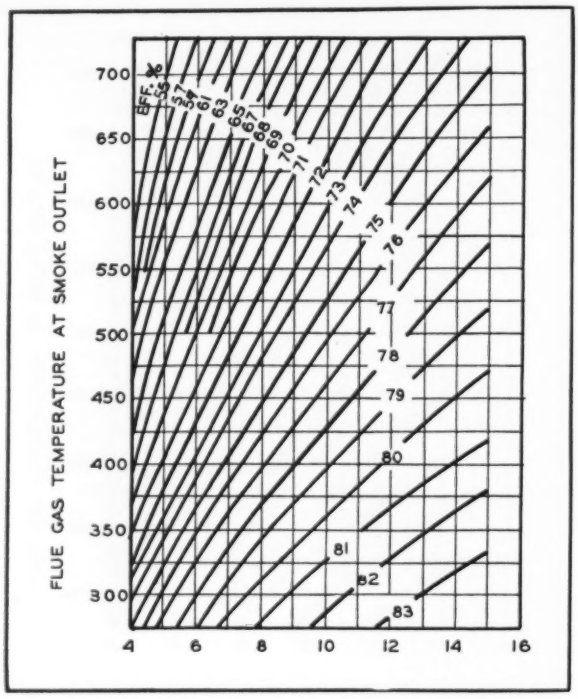


Fig. 1—The figures across the bottom of this chart are CO_2 percentages; the curves give efficiency readings for all combinations of CO_2 percentage and flue temperature

EFFICIENCY is a word which means accomplishment without lost motion or, in other words, production as compared to consumption. It commonly is expressed as a per cent which is obtained from the ratio of

Output / Input

Thus a boiler delivering into the steam 700 Btu. for every 1,000 Btu. of heat capacity in the oil burned would have an efficiency of

700/ 1,000 or 0.70 or 70 per cent

If the oil is not completely burned (incomplete combustion) part of the oil heat is never produced; if all the oil heat is produced but 25 per cent is lost up the chimney, then the boiler efficiency is 100 per cent minus 25 per cent or 75 per cent from which the boiler radiation and other heat losses must be subtracted.

It will be seen from the foregoing that, if burner and boiler efficiency are to be distinguished, one from the other, the distinction must be based on the Btu. developed by the burner and the Btu. absorbed by the boiler. On the other hand the burner and boiler efficiency have certain overlapping features and for this reason the overall efficiency of the boiler and burner is commonly used.

For the ordinary steam boiler the number of pounds of water evaporated per hour is multiplied by the number of Btu. per lb. required to raise the return condensation up to the boiling point and to evaporate the water at that temperature. This is the boiler output in Btu. and is divided by the number of gallons of oil burned during the same period times the Btu. content per gal. of oil. Expressed in formula form this gives

W x H / G x C

when

W is weight of steam produced in lb.
H is the Btu. added per lb. of steam.
G is number of gal. of oil burned.
C is the heat content per gal. of the oil.

Suppose, for example, that a boiler produces 500 lb. of steam per hour at 1 lb. gauge pressure and with the returns coming back at an average temperature of 160 deg. Fahr. During this same period of 1 hour 6 gal. of oil were burned. What is the overall efficiency of the burner and boiler?

The Btu. required to raise the returns from 160 deg. Fahr. to the boiling temperature at 1 lb. gauge (215 deg. Fahr.) amount to

215 deg. Fahr.
160 deg. Fahr.

---

55 deg. Fahr. temperature rise

and as 1 Btu. is required, roughly, to raise 1 lb. of water 1 degree it will require 55 Btu. to raise 1 lb. of water 55 degrees or from 160 deg. Fahr. to 215 deg. Fahr. To evaporate this pound of water at 215 deg. Fahr. requires 968 Btu. making the total Btu. addition per lb. of water evaporated

55 Btu. for heating
968 Btu. for evaporating

1,023 Btu. total.

and 500 lb. of steam per hour require that

1,023 Btu. × 500 or 511,500 Btu.

be added.

If it required 6 gal. of oil at approximately 140,000 Btu. per gallon to accomplish this then the input in Btu. is

140,000 Btu. × 6 or 840,000 Btu.

and the overall efficiency will be

Output / Input

or

511,500 Btu./840,000 Btu. or 61 per cent.

Such a method may introduce difficulties with the ordinary steam boiler as the condensation should be weighed or a steam flow meter used to determine the quantity of water evaporated. Moreover, while this method gives an overall efficiency it does not determine how much excess air is responsible for the results ob-

Calculations for boiler load with proper allowances for boiler efficiency on the basis of CO_2 readings and flue temperatures

tained. In order to make such a test complete CO_2 readings and flue gas temperatures also should be included.

When a hot water boiler is encountered the quantity of water circulated must be weighed or measured by meter. For these reasons a short cut is often taken for approximate work in which CO_2 readings and stack temperatures are taken. Then a 5 per cent loss is allowed for boiler radiation losses and the result is the approximate overall efficiency. The chart shown in Fig. 2 will permit the efficiencies to be determined within about 1 per cent when the flue gas temperatures and average CO_2 is known.

In order to use this chart the average flue gas temperature over the period of the test is determined and the average CO_2 reading calculated. Then by running across the chart from the flue gas temperature scale on the left until an intersection is made with a vertical line run up the chart from the average CO_2 scale at the bottom, the nearest curved line to this intersection will indicate the boiler efficiency after 5 per cent has been deducted for boiler losses.

BOILER LOAD CALCULATIONS

On a steam heating boiler the total load should be computed in equivalent square feet of direct radiation (e.d.r.) and this load consists of

(a) Standing radiation, convectors, unit heaters, and other heat emitting devices each with its maximum Btu. emission divided by 240, the number of Btu. equivalent to 1 sq. ft. e.d.r.

(b) Domestic hot water heating load, if any, also in e.d.r.

(c) An allowance for pipe distribution losses generally assumed as 25 per cent of the sum of (a) and (b).

(d) A starting-up allowance for cold system often assumed at 25 per cent of (a) plus (b) plus (c).

For item (a) the catalog rating for all radiators (except wall radiators) may be used as this rating is based on emission of 240 Btu. per sq. ft. of nominal rating when the radiator is standing in 70 deg. Fahr. air and is supplied with steam at 1 lb. gauge pressure. Wall radiators installed on side walls usually are considered as emitting 300 Btu. per sq. ft. of catalog rating but if placed on the ceiling as emitting the usual 240 Btu. Pipe coils may be assumed at 400 Btu. per actual sq. ft. of outside pipe surface if on side walls and 300 Btu. per sq. ft. of outside pipe surface when hung on the ceiling. Convectors usually have an e.d.r. catalog rating based on 240 Btu. and varying with the connector and the stack height used with the connector. Unit heaters should have the heat emission in Btu. per hr. divided by 240 to obtain the e.d.r.

Suppose it is desired to compute the total boiler load in e.d.r. for a heating system containing

200 sq. ft. floor radiators.
100 sq. ft. wall radiation on side walls.
50 sq. ft. wall radiation on ceiling.
40 sq. ft. pipe coil on side wall.
80 sq. ft. pipe coil on ceiling.
120 sq. ft. convectors, rating in e.d.r.
24,000 Btu. unit heater rating.
100 gal. per hr. water heater from 50 to 150 deg. Fahr. This would be calculated as follows:

Item	e.d.r.
Standing tubular radiation 200 × 1	200
Wall rad. on side walls 100 × 300/240	125
Wall rad. on ceiling 50 × 1	50
Pipe coils on side wall 40 × 400/240	67
Pipe coils on ceiling 80 × 300/240	100
Connectors 120 × 1	120
Unit heater 24,000/240	100
Water heating 100 × 8⅓ × 100/240	347
Total	1,109
Pipe distribution losses 25 per cent	287
	1,386
Morning pick up 25 per cent	347
Boiler rating required e.d.r.	1,733

(Continued on Page 91)

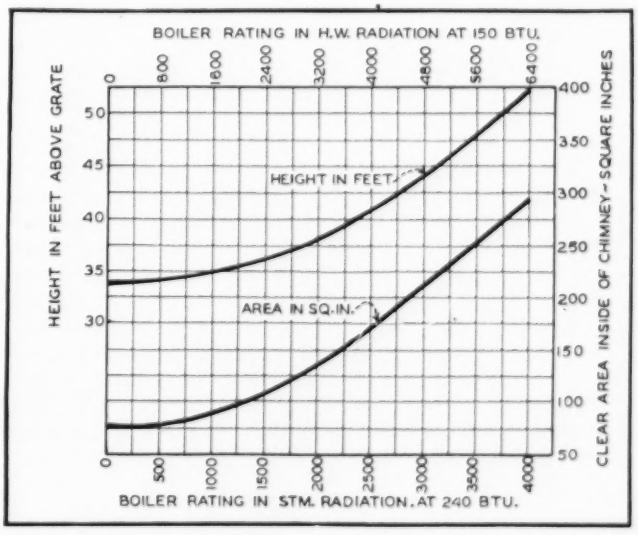


Fig. 2—This chart gives the necessary height and cross section area of chimneys for various size hot water or steam loads

TO THE EDITOR . . .

The tables on labor and material costs for plumbing and heating which were published in the September and October issues of DOMESTIC ENGINEERING *appear to contain very valuable information; so much so, that I have been copying them into my cost book so as to preserve them for future reference. In doing this one or two points arose which I should appreciate your clearing up for me.*

In the first place, it is not stated definitely on what labor units the figures are based except in item 1 where it is definitely stated that Item 1 is based on the labor of one mechanic and one helper for an eight-hour day. Are the other tables compiled on the same basis?

I have been unable to locate any material in the articles published so far covering horizontal lines run on the ceiling or suspended instead of being run in trenches. Will this subject be covered in future articles?

With regard to the table of constants published as Item 22 in the September issue; I am wondering how any factors could apply to such items as gas piping and stand pipes when based on the number of plumbing fixtures in the building. What method was used in deriving these constants?

The above comment and inquiry, one of many received since publication of the first article of the labor and material series, comes from a consulting engineer in New York. Such inquiries are welcomed because they form the basis of added discussion on this highly important subject and often suggest new and more broad applications.

TO THE READER:

All the labor estimating data given in the tables is based upon the labor of one mechanic and one helper for an eight-hour day except in those items covering work done by unskilled labor, in which case the figures are based upon the work done by two laborers, also in an eight-hour day. With regard to ceiling hung installations, please notice that on Page 45 of the September issue of DOMESTIC ENGINEERING, immediately under the table in Item 1, is the following notation which answers your question specifically: "For ceiling hung installations reduce the estimate by 25 per cent."

In reply to your question about the constants in Item 22 the author informs us that these figures are the result of a compilation of 300 different types of jobs. In a short article of Mr. Foster's published a number of months ago was included an example of estimating a complete job. In this example the result of a careful step by step estimate based upon specific tables for each operation such as drainage, vents, gas, vapor vents, steam pipes, cold and hot water, was an estimate of 1,550 days for mechanic and helper. This estimate was then checked by using the constants table giving a result for the entire job of 1,543 days—a difference of less than one-half of 1 per cent. This would seem to indicate that the table of constants is very reliable. It should be noted, however, that the table of constants should be used as a labor check on an *entire* installation since, as you point out, it would not give accurate results if applied to such installations as gas piping or stand pipes alone since the data given in table is in no way intended for this purpose.

LABOR AND MATERIAL

Estimating of complete job cost is simplified and systematized

ARTICLE NO. 3

IN considering the problem of estimating, it is important to remember that all estimates have one purpose—to secure the job at a profitable figure. Jobs are relatively easy to secure on estimates so low that they allow no profit, and on the other hand, estimates which allow too high a profit margin seldom get jobs. There is, between these extremes, a relatively narrow bracket of figures for each job that stand an excellent chance of being low enough to secure the contract and yet being high enough to yield a fair profit upon completion. This series of articles on estimating, of which the present article is number 3, is compiled to assist the plumbing and heating contractor to make such estimates. That it will do so is proved by the following table which gives actual figures for 21 jobs on which the estimating system here outlined was used exclusively. Data given include job number, number of contractors bidding, low figure, high figure, average figure, figure arrived at by use of this system, and place won by this figure. It will be seen that the bids based upon the present system generally approached the average figure indicating that the extremes of both under and over-bidding are consistently avoided.

Job	High Estimate	Low Estimate	Average Estimate	Estimate by this System	Plate	No of Estimates
1	$ 40,300.00	$ 34,685.00	$ 38,000.00	$ 37,500.00	3rd	12
2	16,000.00	10,706.00	14,000.00	14,285.00	3rd	12
3	36,000.00	29,113.00	33,000.00	34,000.00	3rd	10
4	15,400.00	11,200.00	13,800.00	14,000.00	4th	13
5	18,765.00	13,400.00	14,300.00	14,100.00	2nd	15
6	30,877.00	26,000.00	29,038.00	29,000.00	6th	15
7	5,950.00	4,879.00	5,600.00	5,653.00	3rd	6
8	32,900.00	30,450.00	31,340.00	30,795.00	2nd	4
9	4,400.00	2,800.00	3,475.00	3,488.00	2nd	9
10	6,800.00	3,978.00	5,240.00	6,048.00	2nd	10
11	68,600.00	56,900.00	63,000.00	62,000.00	2nd	10
12	9,675.00	8,300.00	8,870.00	8,375.00	2nd	11
13	23,350.00	17,290.00	20,000.00	23,000.00	3rd	10
14	16,891.00	11,530.00	14,000.00	14,375.00	3rd	13
15	48,700.00	39,621.00	44,178.00	44,000.00	3rd	13
16	43,400.00	31,295.00	35,700.00	33,000.00	2nd	14
17	66,100.00	52,000.00	58,000.00	59,280.00	3rd	14
18	21,377.00	14,400.00	18,000.00	18,700.00	4th	12
19	48,400.00	38,000.00	40,875.00	42,164.00	2nd	12
20	417,500.00	345,800.00	400,000.00	415,000.00	2nd	4
21	285,000.00	275,000.00	280,000.00	281,000.00	2nd	4

Item 28

Cutting Standard Weight Pipe with Acetylene

Pipe Size	Oxygen Cu. ft.	Acetylene, Cu. ft.	Time Minutes
2 in.	0.4	0.14	0.5
2½ in.	0.5	0.18	0.7
3 in.	0.7	0.24	0.75
3½ in.	0.8	0.28	0.8
4 in.	0.9	0.31	0.10
5 in.	1.0	0.34	1.2
6 in.	1.5	0.51	1.5
8 in.	2.3	0.61	1.9
10 in.	3.5	0.71	2.3
12 in.	4.5	0.91	2.8
14 in.	4.8	1.2	2.91
16 in.	5.5	1.11	3.4
18 in.	6.4	1.26	3.9
20 in.	7.1	1.41	4.2
24 in.	8.6	1.69	5.1
30 in.	10.4	2.11	6.4

Item 29

Estimating Solder, Flux, and Gasoline Required for Copper Solder Fittings.

Size Fittings	Amount of Solder Required for 100 Fittings
⅜ in.	8 oz.
½ in.	12 oz.

¾ in.	1 lb.
1 in.	1½ lbs.
1¼ in.	1¾ lbs.
1½ in.	2 lbs.
2 in.	2½ lbs.
2½ in.	3½ lbs.
3 in.	4½ lbs.
3½ in.	5 lbs.
4 in.	6½ lbs.
5 in.	9 lbs.
6 in.	17 lbs.
8 in.	35 lbs.

2 oz. of solder flux for each pound of solder.
1 gal. of gasoline for each 100 fittings, average.

Item 30

Welding—Material and Labor Cost

The cost of welding pipe is made up of the following:

1. The amount of oxygen in cubic feet.
2. The amount of acetylene in cubic feet.
3. The amount of welding rod in pounds.
4. Labor, time involved in welding.

Size Pipe	Oxygen Cu. ft.	Acetylene Cu. ft.	Pounds of Rod	Labor Minutes
2 in.	1.5	1.5	.16	3½
2½ in.	2.5	2.5	.20	4.
3 in.	3.3	3.3	.23	5.
3½ in.	4.	4.	.27	5.5
4 in.	5.	5.	.3	6.
5 in.	6.	6.	.4	7.
6 in.	9.	9.	.6	9.
8 in.	13.	13.	.8	13.
10 in.	23.	23.	1.4	20.
12 in.	28.	28.	1.7	24.
14 in.	32.	32.	1.9	27.
16 in.	36.	36.	2.3	30.
18 in.	41.	41.	2.6	35.
20 in.	47.	47.	2.9	40.
24 in.	60.	60.	3.8	50.

Item 31

Unit Labor Cost for Fixtures

The engineering cost involved for roughing fixture complete with waste, vent and water branch roughing is as follows: Time required is in hours for mechanic and helper.

Fixtures	Hours Roughing Time	Hours Setting & Finishing Time	Hours Total Time
W. C. floor type	4	2.	6.
W. C. wall type	5	2.7	7.7
W. C. Flushometers	2	1.	3.
W. C. tanks	1	1.	2.
Urinal, stall	5	5.3	10.3
Urinal, wall	5	2.	7.
Lavatories, wall	3	2.	5.
Lavatories, pedestal	3	2.	5.
Sinks, stone	4	4.	8.
Sinks, combination	6	2.7	8.7
Sinks, slop	4	4.	8.
Drinking fountains, wall	2	2.	4.
Drinking fountains, pedestal	3	2.	5.
Drinking fountains, bubblers only	2	1.	3.
Floor drains	3	1.	4.
Shower drains	3	2.	5.
Area drains	3	1.	4.
Roof connections	6	3.	9.
Overflow drains	4	2.	6.
Shower heads	5	3.	8.
Sill cocks	2	1.	3.
Hose bibbs	2	1.	3.
Hose cabinets	1	2.	3.
Hose reels	1	2.	3.
Lead flashing, drains	..	3.	3.

Item 32

Ventilation Sheet Metal

The labor involved for the installation of sheet metal duct work in pounds per day for mechanic and helper is as follows:

	Fabrication	Erecting
Average job galvanized metal	375 lbs.	275 lbs.
No. 10 gauge work metal	400 lbs.	425 lbs.
Small jobs	270 lbs.	225 lbs.
Public school work	325 lbs.	250 lbs.

For welding allow 90 cents per inch total diameter.
Add 3% of sheet metal weight for bands and hangers.
Add 10% of sheet metal weight for angles.

Canvas connection	3	per day
Fan foundations	3	per day
Louvres and screens	3	per day
Registers	16	per day
Fire dampers	16	per day
Automatic louvres	3	days each
Ventilators	3½	days each
Fans and motors	2	days each

Item 33

Size of Steel Rods to Support Different Size Hangers

Pipe Hangers	Steel Rods
¾ in.-2 in.	⅜ in.
2½ in.-3½ in.	½ in.
4 in.-5 in.	⅝ in.
6 in.	¾ in.
8 in.-12 in.	⅞ in.

Item 34

Weights of Galvanized Sheet Ducts

Gauge	Weight per Sq. Ft.
6	9 lbs.
8	7.5 lbs.
10	6.0 lbs.
12	5.0 lbs.
14	3.5 lbs.
16	3.0 lbs.
18	2.5 lbs.
20	1.75 lbs.
22	1.50 lbs.
24	1.25 lbs.
26	1.00 lbs.
28	.80 lbs.

Item 35

Material Estimates for Pipe Covering

The following materials will cover the number of running feet of various sizes of pipe indicated in this table.

Size Pipe	Type of Material: Canvas 72 in. x 300 ft., 1,800 lbs. will cover	Rosin Paper 36 in. x 166 ft., 500 sq. ft. will cover	Tar Paper 32 in. x 162 ft., 432 sq. ft. will cover	Hair Felt 72 in. x 50 ft., 300 lbs. will cover
½ in.	14,400 ft.	3,984 ft.	3,240 ft.	2,400 ft.
¾ in.	9,300 ft.	2,324 ft.	2,187 ft.	1,550 ft.
1 in.	7,500 ft.	1,992 ft.	1,620 ft.	1,250 ft.
1¼ in.	5,400 ft.	1,494 ft.	1,296 ft.	900 ft.
1½ in.	5,100 ft.	1,162 ft.	972 ft.	700 ft.
2 in.	3,300 ft.	913 ft.	812 ft.	550 ft.
2½ in.	2,700 ft.	664 ft.	648 ft.	450 ft.
3 in.	2,100 ft.	571 ft.	486 ft.	350 ft.
3½ in.	1,800 ft.	488 ft.	400 ft.	300 ft.
4 in.	1,500 ft.	416 ft.	395 ft.	250 ft.
5 in.	1,200 ft.	332 ft.	324 ft.	200 ft.

Wage-Hour Law

Provisions of new Federal Wages and Hours Act briefly reviewed

"WILL you please advise me if the new Wage-Hour Act means that a plumbing shop cannot employ an apprentice unless he is paid 25c per hour?"

This is just one of many questions being asked by the plumbing and heating industry on the possible effects of the Wage-Hour Act which went into force on October 24. An indication of how one of the organizations in our industry is reacting to this new legislation is a bulletin sent out to all contractor-dealers by a large wholesaler. In the bulletin the company announced an emergency service charge of 75c per employee to be added to bills for orders filled "after hours." Under the Act's provisions, employees must not work more than 44 hours per week. If they do, they must be paid time and a half for overtime. To cover this increased pay rate the Leighton Supply Co., Fort Dodge, Iowa has instigated this service charge, according to an announcement.

RECALLS NRA

As was the case with the old NRA, there is some scrambling about and "chicken with its head off" attitude in many industries since the Wage-Hour Act went into effect. This probably will continue until official interpretations are forthcoming, defining who is and who isn't affected by the Act.

On the face of things plumbing and heating wholesalers are included under the provisions of the Act. It must be pointed out, however, that this statement is based only on the information available and official interpretations, when they come through for our industry, may change that viewpoint.

As a basis for determining whether or not contractor-dealers will be affected by this legislation, it might be well to study the chief provisions of the Act. They are:

1. A minimum wage of 25c per hour must be paid employees affected.
2. A maximum work week of 44 hours is set up.
3. Overtime must be paid for at a rate one and a half times the regular wages.
4. Children under 18 years cannot be employed in "hazardous occupations," and those under 16 years cannot work in "manufacturing or mining industries."

As to employees affected, the Act states that it covers, with a few exceptions, those engaged in interstate commerce. In other words people working in trade, transportation, commerce, communication or transmission from one state to another, must not work more than 44 hours a week and must receive at least 25c per hour. On this basis it would seem that plumbing and heating manufacturers, most wholesalers and those contractor-dealers doing business in more than one state are affected.

To balance this, however, the Act also states that employees engaged in retail or service establishments are exempted from the Act's provisions. It could be argued that a plumbing and heating contractor-dealer is a retailer and also maintains a service establishment, so this must be taken into consideration.

"Local retail and outside salesmen" are exempted, so one class of employees in the manufacturing, wholesaling and retailing branches of our industry would appear to be unaffected because of the nature of their work.

"Executives" are another group of employees which the Act does not cover and from this it would seem that the contractor-dealer is excluded as well as officials in the wholesaling and manufacturing branches.

Apprentices are still another group the Act does not touch. "Learners," however, do come under the Act's provisions. This brings up the question of when is an apprentice an apprentice? According to the best authorities if an apprentice is properly indentured, he is not covered by the Act. If he is not, the opposite would appear to be true.

ELEVEN MILLION AFFECTED

According to an estimate made by the Wage-Hour officials, the Act will affect some 11,000,000 employees in the country. It seems sound reasoning to believe that the Act will touch our industry only in respect to the length of working hours, if then.

As the Act is set up, "industry committees" will be appointed to set wage and hour schedules for each industry. Until this is done and official interpretations are forthcoming, each industry and each employer must decide for themselves how to regard the Act's provisions. Heavy penalties are provided for employers who violate the new law. The Act also provides that after the first year, minimum wages will be increased to 30c per hour and after the sixth year will become 40c per hour. The maximum hours are reduced to 42 per week during the second year and to 40 per week the third year and succeeding years.

To show how other industries are reacting to the Wage-Hour Law, a large communications corporation has increased one group of its employees' pay to the minimum provided and cut their working hours to the maximum allowed, meanwhile filing a brief stating that the particular group of employees does not come under the Act, and asking for an official interpretation from the Wage-Hour Administrator.

Kitchen Modernization

Tempt your prospects with photographs of completely remodeled kitchens

"LET the customer sell himself" is time-tried advice. This does not mean, however, that the contractor-dealer should wait for the customer to call at his shop and demand merchandise or service. It does mean that the sales should be accomplished by suggestion; by creating in the mind of the customer so strong a desire for the goods and services being sold that he will himself take the initiative in making the purchase. In the case of kitchen modernization one of the most effective means of accomplishing this end is the use of before and after photographs of completed jobs. Such photographic presentations are especially effective if drawn from local sources with which the prospect is acquainted. Nothing creates so strong a desire for home modernization as a picture of what has been accomplished in some neighbor's home.

Many contractor-dealers who have been outstandingly successful in the sale of kitchen modernization rely on service calls for the opportunity to introduce the question of modernization. This type of entree has several important advantages: First, they get into the home not as an intruding salesman but as professional men who have been consulted upon some question in their field; second, they receive a sympathetic audience and complete attention where the cold-canvass salesman must interrupt the housewife's duties and arouse her interest before he can even start his sales presentation. The result is that the outside salesman often has to resort to a type of selling commonly known as "high pressure" whereas the contractor on a service call may rely on suggestive selling with all the advantages of present and future good will on his side.

After

Pictures such as these seldom fail to create a desire on the part of the housewife to modernize her own kitchen

Note how the old fashion radiator in this kitchen was recessed to give added space and neater appearance

Before

Before →

Efficient utilization of space formerly serving only to catch dust is the keynote of modern kitchen design

The new mode streamlines the kitchen, keeps household supplies and utensils out of sight and protected from dust

After →

It might be instructive to follow through a typical service-call sale to see how the contractor, whom we shall call Bill Brown, builds up interest—then desire—then active demand, for a kitchen modernizing job. This typical interview is a composite built up from information gathered in a recent study of modernization sales. Mr. Brown is called in by Mrs. Smith to repair a kitchen faucet which is leaking. The easiest thing for Brown to do would be to send a journeyman over to repair the faucet, but he has been in this kitchen before. He knows that the fixtures are out of date and the kitchen layout inconvenient. He also knows that the Smiths can afford to remodel if he can convince them of the desirability of doing so. His first step, therefore, is to search through his files of before and after photographs and select a number of pictures showing remodeling jobs in Mrs. Smith's neighborhood. Armed with these and accompanied by a journeyman Brown makes a personal call to attend to the matter of the leaking faucet. One advantage of this plan is immediately obvious—Mrs. Smith is flattered by the fact that Brown himself has called rather than delegate the job to someone else.

PHOTOGRAPHS AROUSE INTEREST

Once he is there, Mrs. Smith will probably provide the necessary opening herself by some such remark as: "I don't see why it is but we seem to be having a great deal of trouble with that sink lately." This is the time for Brown to point out that the sink has given years of good service but is naturally not as reliable as a more recent model—such as Mrs. ———— has recently installed. This remark serves to introduce the photographs which he now hands to Mrs. Smith in pairs labeled "before" and "after" with the names and addresses of the owners.

The next step will depend on Mrs. Smith's reaction. She might ask questions about the new equipment shown and these should be answered fully and carefully. She may ask about price, in which case she should be told that it will be necessary to make an estimate depending upon the equipment selected and the particular arrangement best suited to her kitchen. This should be immediately followed by a suggestion that Mr. Brown call back with a definite remodeling plan and an estimate of the cost of the entire job. If Mrs. Smith assents the interview should be terminated, the faucet repaired and the necessary measurements taken from which a layout may be made.

The first interview has accomplished two things:

1. It has created in Mrs. Smith's mind a desire to modernize in order to keep step with her friends and neighbors who have already done so.

2. It has suggested the advantages in labor saving and convenience which would result from remodeling.

According to one contractor who has had outstanding success in this field, some important points to be kept in mind in the first steps of a remodeling sale are:

1. Attempt to arose the prospect's interest definitely in the first ten seconds.

2. Never talk to the prospect more than three minutes consecutively. After this period if the prospect does not ask a question, ask one yourself or give the prospect photographs, literature or something to look at which may prompt a question. It is definitely known that if the prospect does not make some positive response within the period of three minutes the sales effort is being misdirected. A question from the prospect will often point the proper direction for continuation of the interview.

3. An excellent answer for objections is simply "why?" Many objections that appear sound to the prospect when first stated may seem much less important to her when she tries to answer this simple question.

What the Public Is Reading

Industry's publicity generally favorable; occasional untrue or misleading items can and must be vigorously refuted

"BATHTUB mishaps cost 20 billion in insurance," says a recent newspaper headline which continues, "bathtubs are the cause of so many accidents that since 1929 insurance companies have paid more money in claims resulting from such accidents than the government has spent on relief!"

Twenty billion dollars is a lot of money, and with this thought in mind the occasion for a survey of the subject of bathtub and plumbing accidents seems ripe.

Here is what a preliminary check reveals: Metropolitan Life Insurance Co., New York, reports that all home accidents cost a total of $600,000,000 in 1937. A total of about 117,000 accidents took place in the home during that period and of this number only 557 happened in the bathtub or shower which gossip often pictures as so dangerous. This bathtub accident total represents less than ½ of 1 per cent of total home accidents. Further, from 1933-1937 Travelers Insurance Co. paid out only $3,610,503 in claims for all accidents and bathtub mishaps formed a small fraction of the total.

Using a little private mathematics on the above figures it seems that at the present actual rate of bathtub accidents in the United States it would take approximately 3,333 years to have reached the total of twenty billions suggested in the newspaper article, instead of the nine years since 1929 as stated. In other words at the present rate of bathtub accidents it would take until the year 5371 A. D. for twenty billion dollars worth of mishaps to take place.

Probably the reason that would-be funny stories appear about the allegedly great number of bathtub accidents is due to the fact such mishaps are considered good newsbits. However, all figures belie the truth of many of these newsbits.

Careful Check Of Heating Plants Advised Before Real Cold Weather Approaches
Heating Units Much Improved
FHA Insures Farm Water System Loans
FAULTY PLUMBING HELD HAZARDOUS TO GOOD HEALTH
Plumbing, Heating Group Plans Meeting Series
Housewives Are Ready To Purchase New Equipment
One in Ten Plans To Install New Plumbing
Plumbing Sales Buck Recession
EXPECT HEATING BUSINESS BOOM
Fall Market Looked Upon To Also Increase Plumbing Sales
Taxpayers Unit Will Oppose Plumbing Law
Coplon to Appear For Association At Council Meeting

A survey of home accidents recently compiled by the National Safety Council, Inc., throws some additional light on the actual figures. Of 4,602 accidents of all kinds tabulated in its report, 870 of them took place in the yard, 821 of them took place in the kitchen, 593 on outside stairs, 458 on inside stairs, 393 in the living room, 333 on the porch, 329 in the bedroom, 262 in the basement, 143 in the dining room and only 126 in the *Bathroom*. Only the hall and garage were rated safer than the bathroom.

PLUMBING NOT AT FAULT

Furthermore, a great many of the bathroom accidents are not in any way related to the tub or the plumbing. About a sixth of them are reported due to burns from fires. Nearly a third of the accidents in bathrooms are related to poisoning, other bathroom mishaps are due to falls from windows and from slipping on rugs.

Travelers Insurance Company found that during a period of five years its policyholders had a total of 36,306 home accidents. Of this number 1,057 were falls in bathtubs or showers, or about three per cent of the total. These figures, however, include many accidents that were not serious enough for the injured person to need hospital care.

It is this type of adverse publicity such as the false $20,000,000,000 bathtub accident figure which not only does harm to the plumbing and heating industry, but which should be corrected in the interest of accuracy and fairness.

Examples of more favorable and correct types of publicity regarding the plumbing and heating industry are illustrated on these two pages. These clippings represent but a few of such items appearing recently in the press of the nation. The clippings are examples of the type of publicity concerning the industry which should be encouraged, just as misleading statements should be exposed.

Typical cross-section of publicity received by our industry in the Nation's press. The majority of the clippings reproduced here have resulted from publicity efforts of the Plumbing and Heating Industries Bureau. The following newspapers published the modernization pictures shown in the upper left of the cut, the other items received similar wide circulation: Bartlesville, (Okla.) *Examiner*; Ansonia (Conn.) *Sentinel*; Ballston Spa (N. Y.) *Journal*; Corning (N. Y.) *Leader*; Alton, (Ill.) *Telegraph*; Shelby (N. C.) *Star*; Marion (Ind.) *Chronicle Tribune*; Waynesboro (Va.) *News*; Elyria (O.) *Chronicle Telegram*; San Luis Obispo (Cal.) *Telegram*; Mt. Pleasant (Iowa) *News*; Nanticoke (Pa.) *Press*; Anacortes (Wash.) *Mercury*; High Point (N. C.) *Enterprise*; Gladewater (Tex.) *Times-Tribune*; Marion (Ind.) *Tribune*; Marion (Ind.) *Chronicle*; Logansport (Ind.) *Press*; St. Joseph (Mich.) *Herald Press*; Fort Pierce (Fla.) *News-Tribune*; Fremont (Ohio) *Messenger*; Columbia (S. C.) *State*; Charlotte (N. C.) *Observer*; Ashland (O.) *Times Gazette*; Lima (O.) *News*; Paducah (Ky.) *Sun-Democrat*; Enid (Okla.) *News*; Paterson (N. J.) *Call*; Raleigh (N. C.) *Union Herald*; N. Kansas City (Mo.) *Press*; Richmond (Ind.) *Item*; Coeur D'Alene (Idaho) *Press*; Tuscaloosa (Ala.) *News*; Helena (Ark.) *World*; Tustin (Cal.) *News*; Marshfield (Wis.) *News Herald*; Elizabethton (Tenn.) *Star*; Owosso (Mich.) *Argus Press*; Charlotte (N. C.) *Observer*; Bradford (Pa.) *Era*; Helena (Ark.) *World*; Helena (Ark.) *East Arkansas Record*; Stillwater (Okla.) *Press*; Elizabeth City, (N. C.) *Independent*; Virginia Beach, (Va.) *News*; Bangor (Pa.) *Darby News*; Edmond (Okla.) *Sun*; Palo Alto (Cal.) *Times*; Rocky Mount (N. C.) *Telegram*; Roxboro (N. C.) *Times*; Oswego (N. Y.) *Pall Times*; Pana (Ill.) *Palladium*; Westfield (N. J.) *Standard*; Clarksville (Tenn.) *Star*; Troy (Ala.) *Messenger*; St. Augustine (Fla.) *Record*; Greenville (S. C.) *News*; Jamaica (N. Y.) *Queens News*; *Chicago Daily Calumet*; Danville (Va.) *Register*; Lima (O.) *News*; Nowata (Okla.) *Star*; Marion (Ill.) *Evening Post*

Complete Modernization
Seek Safe Plumbing
Providing safe drinking water for the millions of visitors to the New York and San Francisco World's Fairs to be held in 1939 is occupying the attention of public health authorities in those cities, says the Plumbing and Heating Industries Bureau.
Every effort is being made, the Bureau points out, to prevent a repetition which resulted in 94 deaths and the illness of more than 1000 visitors to Chicago's Century of Progress in 1933.
In a 200-word report on the Chicago epidemic, the United States Public Health Service explains that it was caused by defective plumbing in two of the older Chicago hotels. The old plumbing in these hotels was overtaxed by the rush of World's Fair visitors crowded these buildings to capacity.
The New York and San Fr... on plumbing codes, both of w... set a high standard of health... tection, are being observed by... managements of the New Yo... Fair and the Golden Gate Ex... tion.
Plans are under way in ... cities for the inspection of ... ing in hotels. More than 200 ... have already been inspected by ... New York Health Department.
Sales Above 1936
An active fall market for plumbing and heating equipment is expected in view of reports showing that sales of bath tubs, sinks, boilers, and radiators ... fallen off as sharply as these ... other industries, says the ... and Heating Industries Bu...
... general business activity about ... mt below 1936, sales of plumb... heating equipment currently ... ing 8.58 per cent over 1936 ... bureau.
... of the current sales volume of ... mbing and heating industries ... modernization field, the bu... ds. Rehabilitation of old bath... ...dding of new bathrooms where ... are inadequate, stream-lin... kitchens by the installation of ...isting enameled cabinet sinks, ...ment of antiquated heating ...ent with boilers, installation of ...ed radiators, improvement of ...ler heating plants by the addi... a pump, for mechanical circu... are among the activities in the ...ment field which account for ...tained volume.
... of plumbing and heating ...
WEEK'S BUILDING AWARDS HIGHEST SINCE JUNE, 1937
New York, Sept. 23.—(AP)—Engineering construction awards in the week ended Sept. 30 were the highest since the week ended June 24, 1937, and exceeded the corresponding 1937 week for the tenth successive period, Engineering News-Record reported today.
Public construction was at its highest level since the week ended Jan. 9, 1936, gaining 56 per cent over the preceding week and was 137 per cent over 1937. Details follow:
(Last three dollars omitted.)
Modernization "Miracle"
The bathroom shown in the "before and after" views above was subjected to a thorough modernization. It furnishes a good example of how an old-fashioned bath can be re-created by taking advantage of the opportunity for financing home improvements offered by the Property Improvement Credit Plan of the FHA.
The project called for the installation of up-to-date fixtures and ... elimination of the ventilating window.
PLUMBING FEE AGAIN HELD UP
Although the Seattle Master Builders, Inc., withdrew its protest ... the plumbing fee ordinance ... posed by Mrs. F. F. Powell fail... again today of obtaining a C... Council public safety committee ... majority.
Chairman William L. Norton ... bared the bill a "nuisance to ... and Councilman Samuel J. Hur... again refused to vote for it. Mrs. Powell will submit a minority ... port for passage of the ordinan... which is expected to stir conf... versy in the Council.
The bill would charge a plu... an inspection fee of $1 for ... fixtures and 50 cents for each ... itional fixture installed. At ... request of Councilmen Robert ... Marion and Jason Seavoto, Mrs. Powell's bill today carried ... amendment exempting installa... of fixtures under $50 value, ... that persons doing small rep... would not be taxed.
Mrs. Powell proposed her bill ... raise money to carry on the ... spection work, and to relieve ...
Modernizing Farm Home Is Feature of "Ready For Winter" Campaign
No other single improvement contributes so much to making life in a farm home more comfortable and more healthful during the winter than the installation of a complete water system with modern plumbing, says the Plumbing and Heating Industries Bureau.
Modernization of farm homes with a water supply and waste disposal system is one of the features of the "Ready for Winter" campaign of the Federal Housing Administration.
The entire project including the drilling of the well, installation of an automatic electric pump, the necessary piping, the plumbing fixtures, and the septic tank and the disposal area can be financed on the FHA plan with payments on the monthly or seasonal basis, at the option of the farmer.
Automatic self-oiling pumps of the shallow well and deep well types, are made in a variety of sizes and capacities to meet the ... of different installations ... vary with respect to the ... of water available, the ... of the well, the distance ... the well to the house, and ... volume of water needed. ... planning a farm water sys... it is advisable to keep in mind ... ultimate future requirements ... as well as immediate needs. The ... of an experienced pump ... in the selection of a sturdy ... dable pump of adequate size ... ped with reliable controls ... always be obtained.
SOFT WATER REDUCES HOME LAUNDERING BILLS
New Type of Softening Device Simplify Plumbing Operations
New types of water softeners have been greatly simplified in their operation, they have no moving parts, and no automatic valves to get out of order, says the Plumbing and Heating Industries Bureau.
The object of the manufacturers of water softeners is to provide the maximum water softening capacity and efficiency at the lowest possible cost.
Soft water cleans clothing and linens quickly without leaving ... table streaks of soap curds to stain and scorch in ironing. Soft water saves up to three-fourths of money spent for soap and washing powders. Clothes washed in soft water wear longer. Soft water cleans dishes and silver better and prevents chapped "dishwater" hands.
Soft water is unequaled for shampooing because it leaves the hair soft, lustrous and glistening. Doctors recommend drinking soft water for health. Domestic science experts state that cooking vegetables and making coffee and tea with soft ...
above furnish a convincing illustration of the possibilities of modernization. In the "Before" view a neglected, dingy rear hallway is shown. This space served no functional purposes and was neither adequately lighted nor heated.
The owner of the premises decided that a second bath would be a convenience worth the expenditure necessary to convert the hallway into a modern utility room. The hall space was divided off to permit complete plumbing installation, including a shower. Heating and lighting were installed. The ceiling was plastered, walls tiled, and a mosaic tile floor laid. Funds for the conversion of unused space into a bathroom, where there is adequate ventilation possible, may be obtained under the terms of the Federal Housing Administration's Property Improvement Credit Plan.

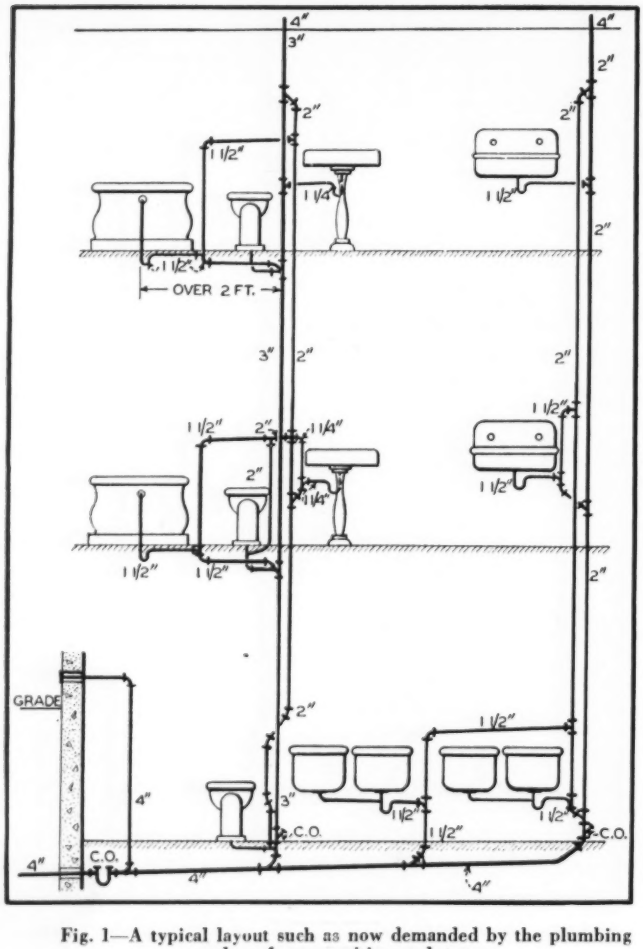


Fig. 1—A typical layout such as now demanded by the plumbing codes of many cities and towns

CODES—*f*

Authority on plumbing codes advises careful composition, minimum restrictions and explicit provisions for drainage, venting and water supply for small town plumbing legislation

THE subject of small-town plumbing regulations has recently been brought to our attention by receipt of a communication from a town in the far Northwest. Part of the correspondence is as follows: "I am taking the liberty of sending to you a plumbing code I have compiled. Please look it over and make suggestions. . . . We have no code whatever. Anything from corrugated culvert to plain black gas pipe has been used for sewage disposal. Vents are unheard of, and most houses are affected with sewer gas. . . . There is much opposition to this code, and your recommendation would help to put it over."

It is not the simple matter that it might seem, to establish and then to enforce a rigid plumbing code in a community that never has known about such matters.

Because of the need of gradually educating the community to a sense of the real necessity for safe plumbing, it seems the better part of wisdom in most cases, not to strike for too much when the plumbing code is first set up. Let the community digest the beginnings of good plumbing before giving them all of the refinements.

In Fig. 1 is shown what may be considered a very satisfactory plumbing layout, such as now demanded by the plumbing codes of most cities and towns.

Three other typical layouts are shown in Figs. 2, 3 and 4. All four installations are for small dwellings, and it is such as these that make up the plumbing for the vast majority of small-town buildings.

Out of a collection of more than 500 plumbing codes to which we have access, we doubt that there are 100 which are arranged in an orderly manner. This applies to nearly all small city and town codes, and to many codes of large cities.

The plumbing code alluded to at the opening of our article, which was submitted for our criticism, is an example of this situation. Also, this and many other codes, are out of balance—good in some classifications and lacking in others. In this code, of 20 typewritten pages, seven are devoted to the legal aspects of the subject; six to water supply, and especially to cross connections; two to country plumbing, especially septic tanks; three to prohibited fittings, materials, joints, etc.; and three to plumbing practice.

Plainly, the lack in this plumbing code is in the section devoted to plumbing practice. Obviously, in a code covering 20 pages, to have only three pages given over to actual plumbing practice is entirely inadequate to the principal purpose of a plumbing code.

for Small Towns . . . .

A good job is not accomplished in the writing of a new plumbing code, or in the revising of an old one, unless liberal space is given to the subject of cross connections. The subject is scarcely referred to in any of the older codes, but in recent years it has come to be of vital importance, inasmuch as it concerns more directly than any other section of a plumbing code, the very lives of the people of a community. In the code which we have mentioned, the subject of cross connections is very adequately handled. However, as far as we can see, in the legal section of the code, only drainage and venting are included in defining the powers of the plumbing department. It would be the safe and wise thing to include water supply as part of the plumbing system, subject to the same jurisdiction as that part of plumbing which includes drainage and venting.

The tracing of disease and death in many communities to the mingling of drainage with drinking water supplies has in recent years compelled attention to the matter of providing proper safeguards in plumbing codes.

The small town more than the large city needs, in its plumbing code, instruction and regulation concerning the use of septic tanks. This is another subject that seldom receives attention of any kind in plumbing codes, and yet it is of great importance. In the case of the plumbing code we have mentioned, the subject is covered well.

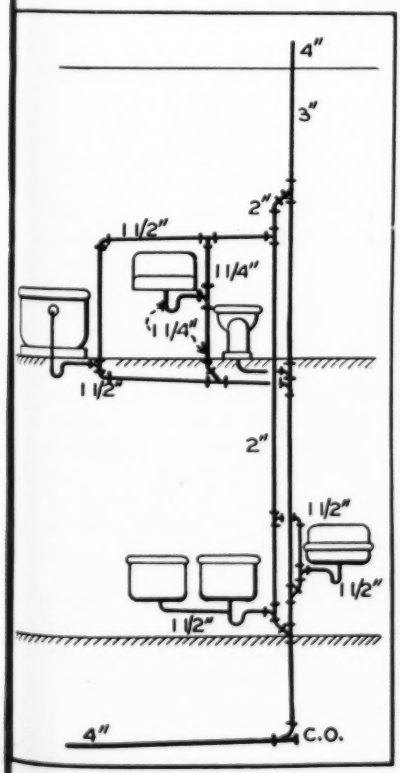
In that part of the plumbing code which covers the legal phases of the subject, the Board of Health, the Building Department or such other city department as selected, should be given full authority to make and enforce a complete plumbing code and to provide the necessary means for administration. There should be included the granting of a license or certificate of competency to master plumbers and journeyman plumbers. This would necessarily include proper provision for examining those who desire to carry on or work at the plumbing trade. Therefore, the code should provide for the appointment and compensation of an examining board, and should state how appointments to the board should be made.

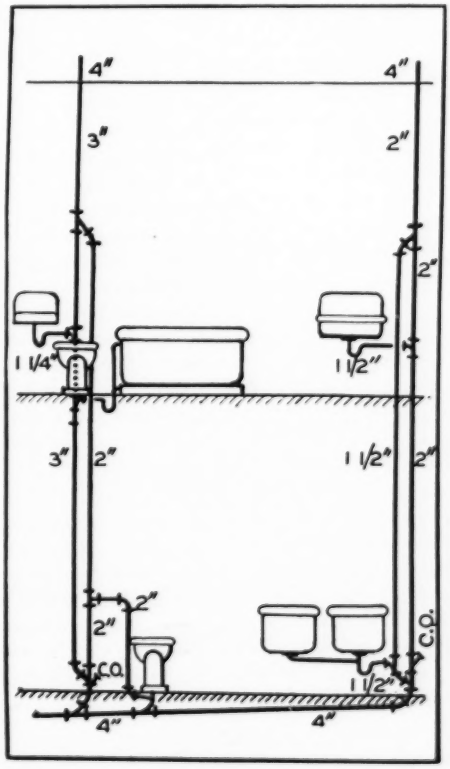
In this section of the code should be included the penalties for different infractions of the plumbing laws, the issuing of permits to do work, the defining of such important words as "master plumber," "journeyman plumber," "plumbing," etc., the payment of fees, the subject of bonding, of inspecting, of tests, etc.

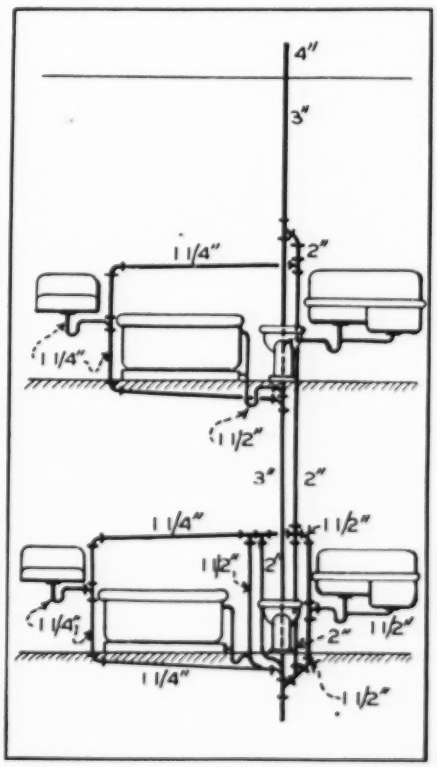
In laying out the legal sections of a plumbing code, we believe much can be gained, and much confusion be avoided, by studying Chapter I, entitled "Regulation of

(Continued on Page 94)

Three other typical layouts are shown in Figs. 2, 3 and 4 below. All of these are for small dwellings, and it is such installations as these that are required by the vast majority of small town buildings







Graphic Calculations..

Design of duct systems on the basis of air velocity is discussed

IN air conditioning systems a part—and often a very important part—consists of the duct work used to convey the air from the apparatus to the room outlets from which the air is delivered into the rooms. Such ducts are most frequently constructed of sheet metal such as galvanized iron, or galvanized steel, although other materials may be used and ducts sometimes are constructed of masonry, plaster board, plaster on wire lath and so on. This discussion will be devoted to ducts of sheet metal construction and the method of arriving at proper sizes for them although this sizing method may be used for any construction if so desired. The term "duct" when distinguished from a "flue" is generally considered to be a horizontal air pipe while a flue is a vertical air pipe. Many specifications make it a point to speak of both *ducts and flues* but it usually will be found that farther along in the same specification the term "ducts" is used as a comprehensive designation of all pipes for conveying conditioned air in the building.

Another confusion exists in the use of the terms "outlet" and "inlet" these being used interchangeably depending on whether one refers to the duct or the room; for instance, an *outlet* on a duct naturally is presumed to let the air *out* while an *inlet* on a duct just as naturally is presumed to let the air *in;* but from the *room standpoint* the outlet on the duct which lets air out of the duct forms an inlet into the room and lets the same air into the room. Similarly an *inlet* into the duct which admits air to the duct will form an *outlet* from the room. In this discussion all outlets will be considered as supply outlets and all inlets will be considered as recirculation inlets viewing the matter from the duct—and not from the room—standpoint.

FEATURES OF A DUCT SYSTEM

A duct system's purpose is that of conveying air to the room or for returning the recirculation air to the apparatus to be reconditioned; in the first case the duct system is termed a supply duct system, or a system of supply ducts, while in the second instance the ducts are termed the exhaust ducts, or—better—the recirculation duct system. A duct system of either type should be as economical to construct as conditions of good workmanship will allow, should follow the shortest run available, should convey the air with as little leakage as possible and should deliver the air at the end or ends with as little change in temperature as possible. To avoid temperature change, duct systems often are insulated in some manner. Besides this, the system should be such as to permit adjustment of the air flow within reasonable limits and should be fool-proof as far as possible so that debris cannot enter the system through carelessness or by intent. The system also should be arranged to be the least objectionable in appearance in locations where it may be exposed, should provide adequate headroom under the ducts and should operate noiselessly or comparatively so.

ELIMINATION OF AIR NOISE

In air conditioning work for buildings not in the industrial class the elimination of air noise in the ducts is a most important item and an installation which otherwise is eminently satisfactory will be condemned very quickly by the owner or tenant if air noise is produced to an objectionable extent. Now air noise is a combination of high velocities and sharp turns and transformations in the ducts although if the velocity is sufficiently high, noise will result in any case. No one can lay down any hard and fast rule as to just what velocity in the duct system will result in noise as it depends upon the construction of the ducts and the quality of workmanship in the fittings and joints as to whether a given velocity will produce air noise or not. It is safe to say, however, that if a velocity of 1,000 fpm. is not exceeded in any part of the system there will be little danger from noise in any duct system of reasonably good construction. It probably is quite possible to go as high as 1,200 fpm. and even 1,500 fpm. where good duct conditions exist but the 1,000 fpm. limit in velocity will guarantee the elimination of air noise in all but extreme cases. At the same time the velocity must not be allowed to become so low that the control of the air flow is lost and for this reason it probably is not well advised to use less than 400 fpm. as the lowest velocity in a duct system.

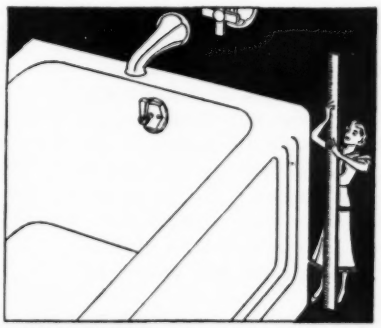
This brings the individual who desires to size up a system of duct work around to the point where he can see the advisability of not taking chances with high velocities and also in not reducing velocities to too low a point. It also naturally results in the design of air conditioning units being based on velocity rather than pressure drop. In industrial work where noise is *not* a consideration, or where the process work demands it, velocities of 2,000 to 3,000 fpm. often are used and in such cases the pressure drop assumes much greater importance than it does in air conditioning work where the velocities range from 400 fpm. to 1,000 fpm. This is

(Continued on Page 87)

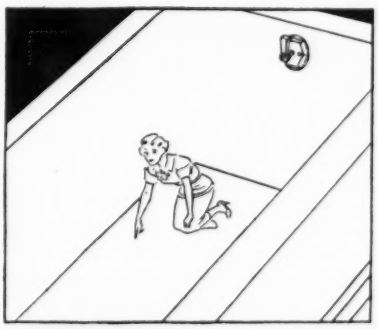
Madame HERE ARE THE FEATURES OF THE MASTER PEMBROKE BATH...

●Women are quick to recognize real values—extra features—extra qualities. And you will find them especially responsive in recognizing the special advantages of the "Standard" Master Pembroke Bath.

Point out to women these features that mean extra safety, comfort and bathroom beauty. The Master Pembroke is available in white, black and ten striking colors. Ask your "Standard" Wholesale Distributor about this new bath and FHA terms through our affiliate, Heating & Plumbing Finance Corporation.

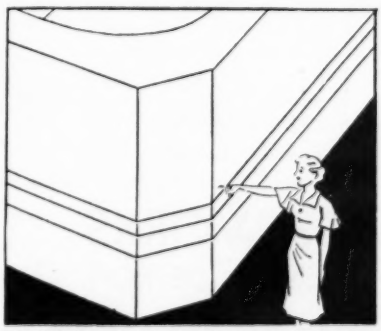


2 INCHES LOWER—Offers extra safety and comfort in stepping in and out of bath.

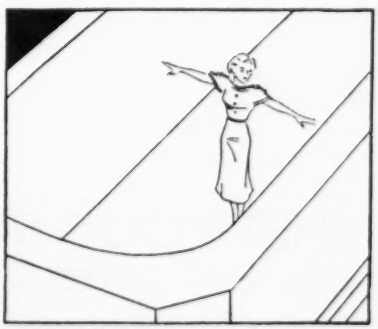


FLAT BOTTOM—Makes surer footing for comfortable shower bathing.

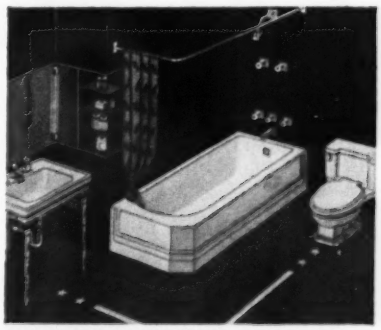
FLATTER RIM—3¾ inches wide rim gives convenient seating room for foot bathing.



SMART MODERN DESIGN—Beautiful lines that match modern bathroom design.



ROOMIER BATHING—Extra width to give spacious, enjoyable bathing room.



NEW BATHROOM BEAUTY—The "Standard" Master Pembroke Bath sets a new style.

Standard Sanitary Mfg. Co.

PITTSBURGH, PA.

Division of AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

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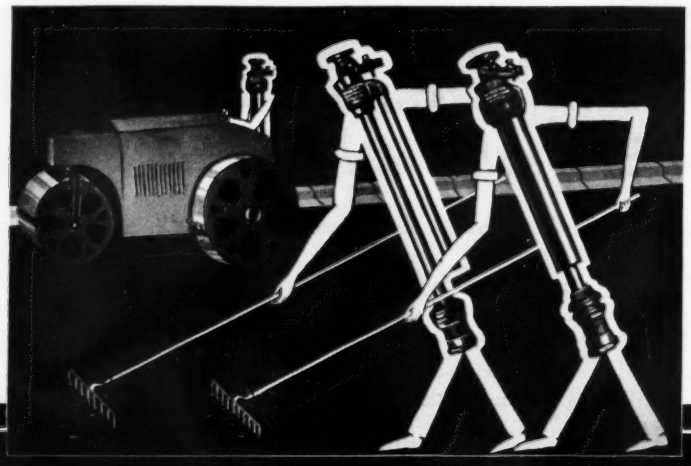

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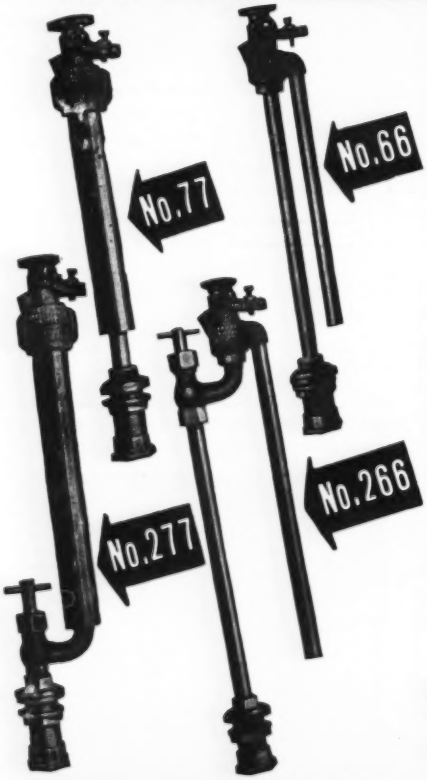
SHERWOODS Pave the Way!



RIGHT now, in many of the homes in your locality, the need exists for the replacement of worn-out, defective or out-moded plumbing equipment. Unless you have a means of access to all of these homes, it is difficult to determine how extensive this need may have become.

But of this you can be sure . . . and many successful plumbing contractors will bear us out . . . SHERWOOD Ball Cocks provide a most effective entering wedge by which you may conduct your own survey of these homes. SHERWOOD Ball Cocks assist you in bringing to light . . . and to the attention of your prospects . . . the need for many plumbing improvements. In this manner, SHERWOOD Ball Cocks actually pave the way to selling opportunities of which you may not have previously been aware.

You'll find your prospects receptive to the SHERWOOD story, particularly if they've ever encountered ball cock trouble. They'll be glad to learn how SHERWOODS completely subdue the gushing, gasping gurgle peculiar to inferior flushing devices . . . how they make water waste a thing of the past . . . how they close dependably against any city water pressure.

At the left are shown four popular sellers in the complete SHERWOOD line. There's a SHERWOOD to meet every requirement regardless of application. For details on any or all of these types consult your wholesaler. Better yet, order a stock of SHERWOODS today and go after this extra business.

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SHERWOOD Ball Cocks

Sizing an Expansion Tank

A reader asks how to size an in-basement expansion tank for a hot water heating system installation

Will you please tell me how to arrive at the size of the expansion tank for a tank-in-basement hot water heating installation? Is there any rule for a certain size of tank for a given number of radiators?

Penna. W. S. F.

To the Reader:

The size of closed, tank-in-basement expansion tanks is variable depending on the height of the highest radiator above the tank. This is for the reason that the pressure on the tank when cold must be sufficient to produce a small pressure on the topmost radiator but the pressure on the tank when hot must not exceed 30 lb. per sq. in., the limit of working pressure on the ordinary hot water boiler. It is evident, for example, that when the highest radiator is, say, 30 ft. above the tank, the pressure in the tank when cold must be around 15 lb. in order to hold a small pressure on this top radiator. In order to get 15 lb. in the tank water must be admitted to the tank until the compressing of the air in the tank above the water produces a pressure of the required 15 lb. This requires a partial filling of the tank with water and the amount of air space above the water is reduced to this extent.

When the water in the system is heated and expands, it is evident that the increase in volume must enter the tank and will farther compress the air therein but that this expansion action must not raise the tank pressure above 30 lb. as a maximum. The expansion of water in the system usually is around 5 per cent of its volume between the cold temperature and the maximum water temperature reached on the coldest days; owing to the difficulty of computing accurately the exact amount of water in the system the expansion usually is assumed at about 10 per cent of the approximate amount of water thought to be in the system so as to be sure to have the tank of adequate size.

The chart shown in Fig. 1 has been worked out on this basis and indicates, for example, that with 1,000 sq. ft. of hot water radiation, if the top radiator is on the fifth floor the tank capacity would have to be 300 gal.; if the top radiator is on the fourth floor the tank may be reduced to 175 gal.; if the top radiator is on the third floor, the tank may be reduced to 100 gal.; on the second floor, to 75 gal. and if radiators are on the first floor only, the tank only need be 50 gal. This may be reduced to a table as follows:

Height of Top Radiator	Gallons per Sq. Ft. of Radiation
1st Floor	0.05
2nd Floor	0.08
3rd Floor	0.10
4th Floor	0.17
5th Floor	0.30

These would be minimum sizes and tanks of larger capacity would cause no objection and would work equally well.

(Continued on Page 95)

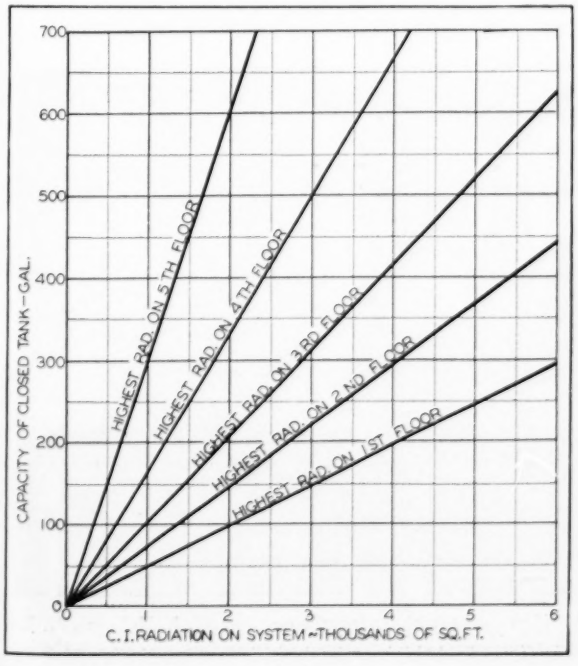
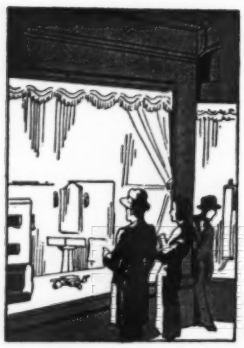


Fig. 1—The required size for basement expansion tanks for various amounts of radiation and different numbers of floors may be read directly on the left of this chart.



Trade

News of . . . Men . . . Associations . . . Events . . .

Pacific Coast Inspectors

- *Annual convention of Pacific Coast Plumbing Inspectors Assn. has record attendance—A variety of important topics on program*

Setting a new high in attendance with a total registration of 176, and with a wide range of educational and entertainment features on the program, the Pacific Coast Plumbing Inspectors Assn. held its ninth annual convention at Hotel Claremont, Berkeley, Calif., October 13, 14 and 15.

Elected to office for the coming year were: Ed. Beale, San Diego, president; E. A. Court, Sacramento, vice president, northern division; G. A. Spear, Alhambra, vice president, southern division. Stephen I. Smott, Los Angeles, is serving his tenth term as secretary. Executive committee members are: (northern division) L. M. Hendsch, A. F. Ferrell, A. R. Cordan, Max Kreutz, Gay R. Hilliker; (southern division) E. R. Longley, D. W. Turnbull, W. S. Higham, W. F. Creller, W. L. Hallberg. Gustav Weimer, Los Angeles, was reelected chairman of the research committee.

Chief among the speakers on opening day were L. J. Kruse, past N.A.M.P. president, and J. J. McLeod, vice president of the California Master Plumbers Assn. These talks were followed by brief responses by Pres. George Grimshaw and Vice President Beale.

Research Report

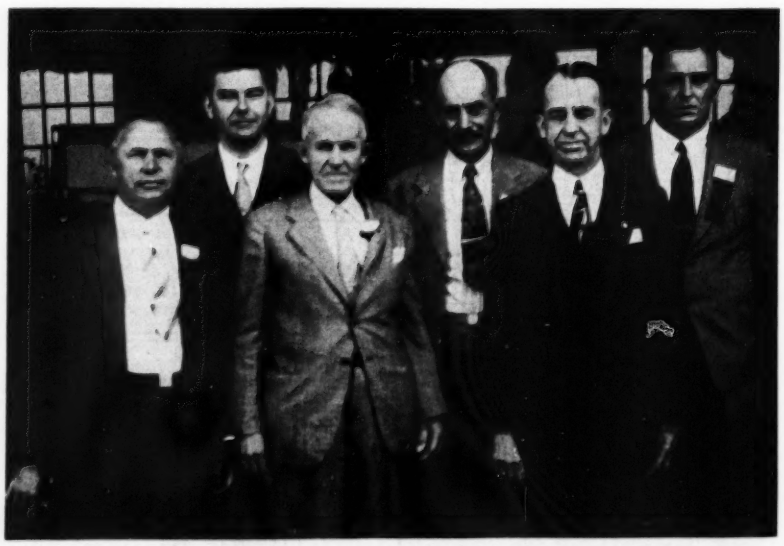
Hubert A. Reeves, research committee, drew commendation for his paper on "Correctly Designed Water Pipes—A Safeguard Against Back-Siphonage." He explained the "demand factor"—probable number of fixtures operating simultaneously—in various types of buildings, and its relation to proper design; also the friction loss in fittings, adding that "Tests have shown that if the ends of pipes in elbows and tees are not reamed, the friction is five times as great as in reamed pipe."

"As the situation stands," he concluded, "we find ourselves facing the necessity of making a far-reaching decision. Are we going to elevate plumbing from a trade to the profession of sanitary engineering, or will it be kept down to the level of rule-of-thumb mechanics? No half-way measures are possible where health is concerned, and I sincerely hope that the Pacific Coast Plumbing Inspectors Assn. will soon amend its standard plumbing code to incorporate a section governing the proper sizing and installation of water supply lines."

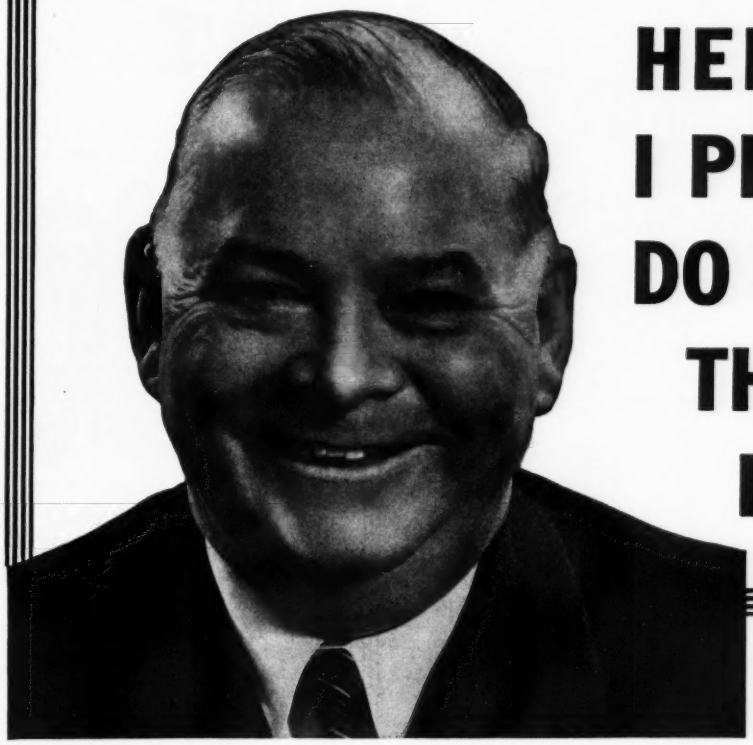
W. J. Fox, chief engineer, Los Angeles Building Department, spoke on the inspector's part in the set-up of the modern municipality, wherein every function should be carefully synchronized with every other part—"just as a clock is built." Dr. Richard Graves, secretary, League of Municipalities, urged that the inspectors work toward a comprehensive plan of educational advancement. It was his opinion that WPA funds could be secured for such purpose. G. E. Arnold, water purification engineer, revealed that in one locality a survey had shown 221 cross connections—created by handymen—in hotels.

Hollis R. Thompson, Berkeley city manager, said in part: "We should work together toward visioning the ideal city of the future, especially from the standpoint of sanitation." He urged a standardized code and its strict enforcement without political fear or favor.

The Pacific Coast Plumbing Inspectors Assn. now numbers 115 members from twelve far western states and British Columbia, an increase of twenty for the year. This year's convention was sponsored by the Berkeley-Albany Master Plumbers Assn. in cooperation with the Oakland group of the Northern California Plumbing and Heating Wholesalers Assn.



Research committee of Pacific Coast Plumbing Inspectors Assn., W. L. Hallberg, H. W. Geyer, Gustav Wiemer (chairman), J. M. Winkler, E. R. Longley, H. A. Reeves



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They've helped to make heating and plumbing a business to be proud of. *They insist on a reputation for satisfactory installations* — encouraging men like you and me who give the public real service — who do work that reflects credit on all of us.

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You'll do yourself a favor if you'll write for their new Blue Book — *The Better Finance Plan For Better Housing,* and for a set of the new simplified forms.

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It means you can do your jobs on schedule—without waiting—without fussing—without long delays that let the customer cool off.

It's another good reason for using products with the Best Known Name in Heating—the name your customer knows and trusts—the name he accepts without argument—

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ARCO RADIANT CONVECTOR

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"LUCKY 7" IDEAL BOILER

America's low-cost, quick-selling boiler. More for the money than ever before! Special models for coal (hand or stoker-fired), oil and gas. Features efficiency, economy, quick pick-up, improved flues, provision for domestic hot water, plus many operating advantages. Just one in the complete line of

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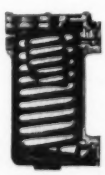
Easily installed in basement or closet, provides healthful moisture for the entire house from a single outlet grille. Completely automatic, including outdoor low-temperature control to prevent over-humidification. Other humidifiers (series 8000) attach to boiler, provide domestic hot water as well.

No. 300 ARCO-DETROIT MULTIPORT VALVE

Makes automatic heat mean automatic comfort. Vents radiators 3 times as fast as average valve of its type. Adjustable for *balanced* heating.

EXCELSO INDIRECT HEATER



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Wis. Supervisors

- *Wisconsin Society of Plumbing and Sanitary Supervisors meets at Madison - Broad, two-day program enjoyed*

The Wisconsin Society of Plumbing and Sanitary Supervisors met in annual convention in Madison, October 13 and 14 with the largest attendance in recent years. The following officers were elected: Walter Spencer, president; Harvey Hansen, first vice president; W. Collette, second vice president; J. H. Owens, third vice president; R. Mason, secretary and treasurer.

Thursday afternoon's session was held jointly with the building inspectors. Frank R. King, state plumbing and domestic sanitary engineer, presented two papers, one entitled "Cooperation Between Architects, Plumbing Supervisors, Engineers and Building Inspectors," and the other "Promotion and Scope of Township Ordinances."

Anthony King, secretary of the Wisconsin Pipe Trade Assn., addressing the convention, gave credit to efforts made by local and state supervisors to enforce code provisions. Apprenticeship then was discussed by several speakers.

Friday Topics

Among the talks on Friday were "The Use of Copper in Plumbing," by C. A. Hill, research engineer, Mueller Brass Co., Port Huron, Mich.; "Two Years of Progress in Promoting Rural Sanitation Under Social Security," by Chester Ohma; "Twenty Years of Progress in Plumbing Supervision," by J. H. Owens.

Mr. Owens said in part: "Home owners today demand a higher standard of building workmanship, design and equipment, than at any time in the history of the building industry. It has been truly said that the average American family enjoys more home luxury in the form of sanitary plumbing in the low cost home today than the wealthy people of 50 years ago. These improvements made in plumbing sanitation, fixture design, installation methods, and standardization of materials used came from the industry itself. No one outside of the industry cares or knows enough about plumbing to demand laws and ordinances to regulate properly this type of work."

Objectives for Year

Dr. Neuport, assistant state health officer, gave an instructive talk on hospital plumbing, explaining the important part the plumber plays in this work. Another speaker was Peter King, secretary of the Wisconsin Master Plumbers Assn.

In a summary, Frank R. King listed the following as some of the objectives for 1938 and 1939: (1) Finding ways and means to discover more promptly any plumbing installation made beyond the confines of our municipalities where local supervision is not applicable. (2) Providing an additional plumbing supervisor. (3) Encouraging more municipalities, townships, cities and villages to more adequately provide for supervision of plumbing and related sanitation by local ordinances, and thus further promote plumbing sanitation and home comforts. (4) Holding the present state plumbing law and code provisions intact against any undesirable amendments and to consider favorably, if found necessary, further amendments to protect adequately the drinking water supply.

Utility Cooperation

An important topic at the annual meeting of the American Gas Assn. (Atlantic City, N. J., October 10-14) was cooperation with master plumbers and dealers. In speaking on this subject, Merrill N. Davis, president of the Assn. of Gas Appliance and Equipment Manufacturers, paid tribute to the work of plumbing and heating contractors. "They definitely are an asset to our industry because of their ability to sell water heating and house heating equipment," he said.

"With this group, I feel that our industry has practically reached the correct solution for cooperation. There is still some room for improvement and we are rapidly ironing out our differences."

Mr. Davis reviewed the agreement made in 1931 by the A. G. A. and urged the further extension of cooperation. "There are about 30,000 plumbing and heating contractors to whom this type of cooperation should be extended," he stated. "To attempt to compete with them instead of enlisting them as supporters of our cause is, to my mind, sheer folly and will eventually lead to defeat."

Fla. Meeting

F. P. Moss, N. A. M. P. director, and Herbut L. Schaller, Miami, were the main speakers at a master plumbers meeting on October 17 at the Chamber of Commerce Bldg., Orlando. Subjects of interest were discussed, and it was decided to hold regular meetings of the master plumbers in the section.

William Dunston, central district vice president, Raymond Dickson and F. R. Fanning, Winter Park, and others of surrounding territories attended.

At Pacific Coast Plumbing Inspection Assn. convention: Stephen I. Smoot, secretary; E. A. Court, new vice president; C. A. Spear, new vice president; Ed. Beale, new president; George Grimshaw, retiring president; J. J. McLeod, vice president, California Master Plumbers Assn.; Fred Johnson, San Jose chief inspector; G. R. Hilliker, Fresno chief inspector

At the annual golf tournament of the Plumbing and Heating Club of San Francisco, October 21, were: L. P. Peeples, J. D. Fleming, F. F. Elliott, W. A. Taylor, Thomas Douglass, F. A. Calmus, F. W. Hook, W. Derbyshire, J. Carl Browning, N. H. Peterson, C. N. Gilley and Frank Mosher

San Francisco Golf

Almost as much of an institution as its annual Hi-Jinx, the autumn golf tournament of the Plumbing and Heating Club of San Francisco drew a fine attendance at the fall meet, held October 21 at the San Francisco Golf Club. W. A. Taylor, past president of the plumbing and heating organization, acted as host. Literally hundreds of sand-traps, a fairway of solid turf, make this one of the finest and "toughest" courses in California.

The following were winners: class A, low gross, W. P. Scott, Jr.; low net, a tie between F. F. Elliott and Thos. Douglass; class B, low gross, L. E. Shaffer; low net, Fred Rennekar; class C, low gross, Earl Purves; low net, W. A. Traynor.

Some of the scores:

Gabbert	98	15	83
Woodson	90	14	76
Miller	103	15	88
Rennekar	95	22	73
Aitcheson	114	G	114
Garnjost	107	27	80
Camp	89	11	78
Kolb	109	24	85
Lawson	98	21	77
Shaffer	87	17	70
McCarthy	120	30	90
Lane	109	23	86
Kraus	95	18	77
Haley	96	15	81
Derbyshire	96	16	80
Calmus	116	30	86
Higgins	98	21	77
Keeler	124	30	94
Mosher	99	19	80
Browning	155	G	155
Hanson	106	26	80
Elkington	111	G	111
Rainwater	105	19	86
Forsythe	108	24	84
Purves	103	24	79
Roberts	123	30	93
Dunlap	125	30	95
Hoopes	111	28	83
Cooper	93	G	93
Taylor	102	17	85
Fleming, J. D.	97	15	82
Fuite	92	8	84
Peterson, C. L.	124	25	99
Fleming, D. D.	104	G	104
Hardy	102	G	102
Brace	94	16	78
Ahern	124	27	97

H. P. & A. C.

Purpose of the directors meeting of Heating, Piping & Air Conditioning Contractors National Assn., held in Pittsburgh October 14 and 15, was presentation and discussion of the program for the 1939 convention. Details were formulated for the celebration of the organization's golden anniversary which comes next year.

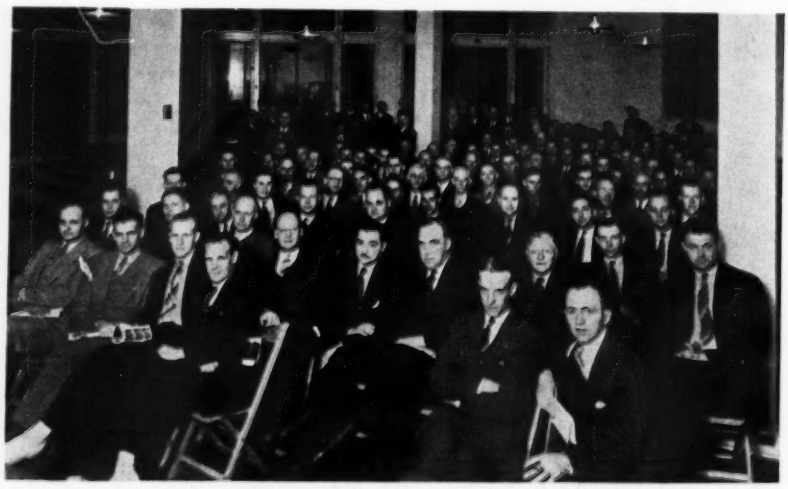
George H. Dickerson (president), Joseph C. Fitts (secretary), Frank E. Kise (vice president), James M. Anderson, Maurice J. Chagnard, Howard E. Crook, J. Lawrence DeNeille, L. L. McConachie, J. E. McNevin, Thomas O. Callaghan, William J. Olvany, S. Austin Pope, H. Merwin Porter, George J. Stoehr and E. W. Thompkins comprise the board of directors.

Sanitation Meet

Promoting its campaign to secure plumbing regulations for the installation of sanitary and sewage systems outside the city limits, the Dayton, Ohio association met at the Miami Hotel, October 5 and heard Dr. H. H. Pansing, director of the Montgomery County Health Board, give an interesting talk on sanitary conditionings in country communities. He also outlined the duties of his department. Under an Ohio law the county health boards have the power to enact regulations and appoint a county plumbing inspector.

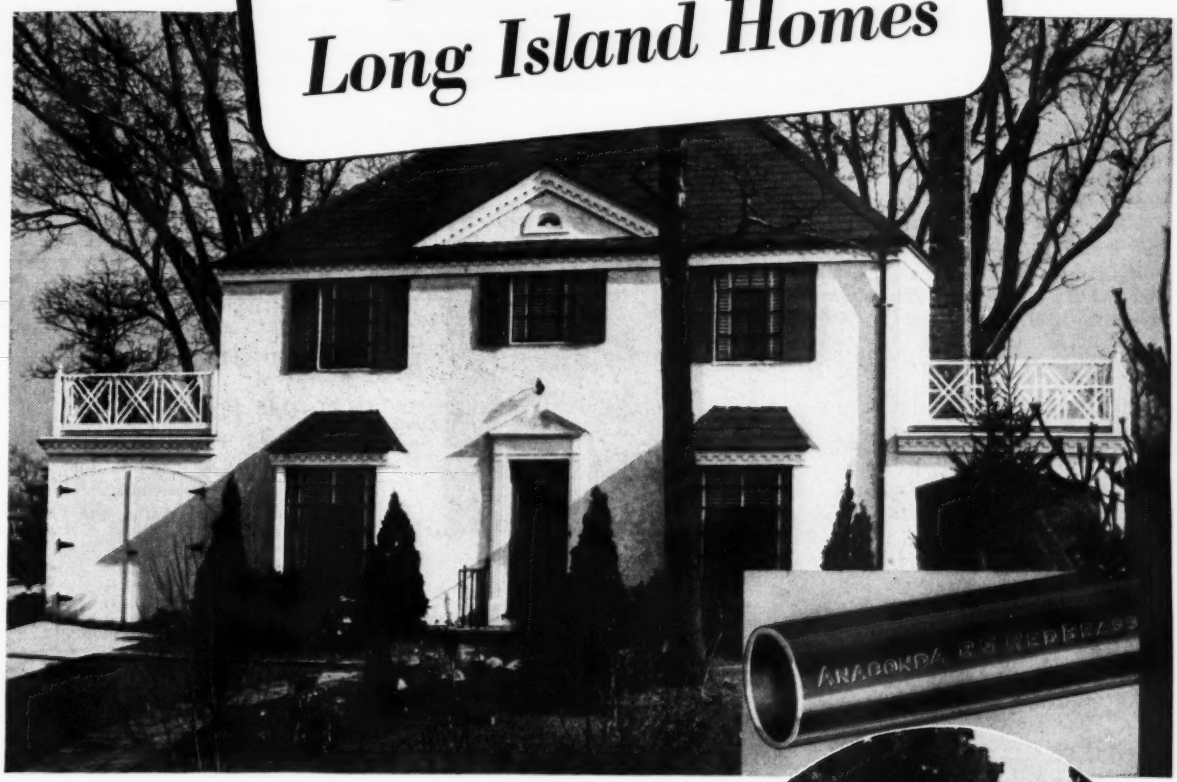
Dr. John Burke, chief of the bureau of inspection and sanitation of the city, discussed the problems of his department relating to plumbing. He announced that his department hopes to enforce an order eliminating water supply hazards in dairies.

Ed. L. Penfrase exhibited the film of the Copper & Brass Research Assn. at the meeting. W. W. Morehouse, superintendent of the water division spoke. Other visitors included W. H. Baker, building commissioner; Merle Hay, superintendent of building construction; James Murray, chief plumbing inspector, and his staff; William Hummell, American Brass Co.



Group of 126 contractor-dealers at recent meeting in the Crane Co., Buffalo office.

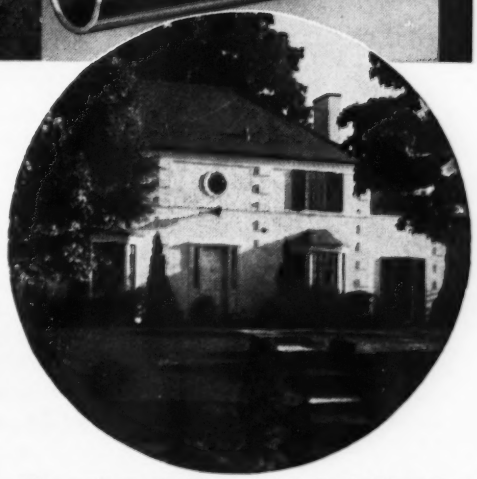
Anaconda Quality built into these Long Island Homes



Levitt & Sons prove quality need not be sacrificed in medium-priced houses

Levitt & Sons of Manhasset, Long Island, successful builders of modern medium-priced homes, specify materials with an eye to the future. They realize that costly maintenance in the small home is far more burdensome than in a mansion. A standard item in these dwellings is Anaconda "85" Red-Brass Pipe. It enables the builder to guarantee his clients permanent freedom from repairs, replacements and annoyance due to rust.

Ten years were devoted to exhaustive experiments before The American Brass Company recommended Anaconda "85" Red-Brass Pipe to architects. Subsequent service records, accumulating since 1924, have justified this recommendation. They prove that this pipe, containing 85% copper, is the highest quality corrosion-resistant pipe obtainable at reasonable cost. Carried in stock by leading plumbing supply houses.



Two medium-priced homes built by Levitt & Sons of Manhasset, Long Island. Anaconda "85" Red-Brass Pipe installed for hot and cold water lines.

ANACONDA 2134

Anaconda "85" Red-Brass Pipe

THE AMERICAN BRASS COMPANY, General Offices: WATERBURY, CONNECTICUT

Offices and Agencies in Principal Cities • In Canada: ANACONDA AMERICAN BRASS LTD., New Toronto, Ont.

Portland Meets

The Master Plumbers Assn. of Portland, Ore., held its first meeting of the winter season October 5 with approximately 50 members in attendance. Otto Schultz, president, was chairman of the meeting. City Commissioner Bean spoke on the water purification and prevention of pollution bill that is to come before the voters of Portland in the November election.

Ivan Anderson of the Material Credit Assn. explained how members of his association are aided in bill collecting. George Otterstedt, acting chief plumbing inspector, and Arthur Farrell, state plumbing inspector, were selected as delegates to attend the convention of the Pacific Coast Plumbing Inspectors. The delegates were instructed to invite the plumbing inspectors association to hold next year's convention in this city. Mr. Schultz announced that meetings would be held every Tuesday evening. Refreshment were served.

Blank Dinner

The special committee in charge of the testimonial dinner to be given to National Vice Pres. Henry S. Blank of Dayton, Ohio, has completed arrangements for the affair to be held in the Flagship of the Miami Hotel. Congressman Byron B. Harlan of Ohio will be the principal speaker. The committee in charge is composed of John Haas, Samuel Fahrer, Henry Osterfeld, Dick Clemens and C. M. Ganger.

Contractor Meet

Burnham Boiler Corporation, Irvington, N. Y., held a meeting for contractor-dealers at its Elizabeth, N. J., plant on September 29. At the meeting a new model was presented in a novel manner. It was encased in a colorful "hat box" and tied up with a large white rope such as is used in marine work. On top of the box were several balloons blown up and in a cluster.

After the introduction, the balloons were broken, the rope untied and the top removed. The front of the box was hinged to the sides which in turn were hinged to the back. When the box was opened it formed a background for the new product.

Anthracite Schools

Anthracite Industries, Inc., has announced that evening classes of its merchandising school will be formed in twenty key cities this fall and winter. October classes were held in Providence, R. I., Boston, Springfield, Mass., Albany, N. Y., and Syracuse, N. Y.

The curriculum of the two-evenings a week course will comprise the fundamental subjects developed in the merchandising schools to date.

Obituaries

H. W. Dexter

Howard W. Dexter, 43, general sales manager of the Petroleum Heat and Power Company, Stamford, Conn., died September 30 at Greenwich, Conn. Mr. Dexter started his career in the advertising business, later joining Williams Oil-O-Matic Heating Corp. at Bloomington, Ill. He became associated with Petroleum Heat and Power Company ten years ago, becoming general sales manager four years ago.

H. W. Dexter

Mr. Dexter is survived by his widow, his mother and two brothers.

P. A. Dolan

Patrick A. Dolan, of P. A. Dolan Co., heating contractors for many years in Boston and vicinity, died October 16. Mr. Dolan is survived by two brothers.

R. A. Wenzel

Richard A. Wenzel, 56, in the plumbing business in Appleton, Wis., for many years, died in that city on September 27.

R. W. Bernhard

R. W. Bernhard, 44, a member of the San Antonio Master Plumbers Assn., died at his home on September 16. He is survived by his widow, a daughter, a son, a sister and four brothers.

A. E. Buckley

A. E. Buckley, veteran Provo, Utah master plumber, died recently in that city. For many years Mr. Buckley was a partner in the Buckley and Haws Plumbing Co. and a member of the Utah County Assn. of Master Plumbers. He was also a past member of the board of governors of the state association. Surviving are his widow and three children.

W. W. Blunt

W. W. Blunt, 65, owner and operator of the W. W. Blunt Plumbing Co., Evansville, Wis., died suddenly Oct. 16 at his home in that city. Mr. Blunt had been engaged in the plumbing business for nearly 50 years. He is survived by his wife, two daughters and two brothers.

James Bropson

James Bropson, 78, retired plumbing contractor of Lakewood, Ohio, died recently in that city. He is survived by two sons, two daughters, a grandson and a brother.

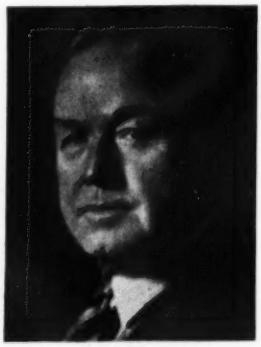
H. W. Bailey

Henry W. Bailey, 64, a heating engineer for W. A. Case & Son, Buffalo, died in that city recently. He is survived by his widow and one daughter.

M. F. Barrett

Michael Francis Barrett, 75, founder and president of The Cleveland Brass Mfg. Co., Cleveland, died October 6 in his home in Cleveland. He had been ill for a month, but continued his work until October 1.

Mr. Barrett founded The Cleveland Brass Mfg. Co. in 1892. At the age of 23 he was elected to the Cleveland Board of Education. He later served several terms as councilman, and was director of police. His other civic interests were widespread.



M. F. Barrett

Besides his wife, Mr. Barrett leaves a son, T. F. Barrett, vice president of the company, and three daughters.

Fred Schreiner

Fred Schreiner, Sr., 69, head of Fred Schreiner & Son, Marshfield, Wis., plumbing and heating firm, died Oct. 11 in that city. Mr. Schreiner had been engaged in the plumbing and heating business in Marshfield for the past fourteen years.

C. R. Baechel

Clarence R. Baechel, 48, engaged in the plumbing business for twenty years in Canton, Ohio, died recently after a long illness. He was a member of the local association. His widow and two sons survive.

K. F. Johnson

Kenneth F. Johnson, 41, well-known plumbing and heating contractor of Jamestown, N. Y., died recently. He was a member of the local master plumbers association. He is survived by his widow.

T. M. Cryan

Thomas M. Cryan, 70, vice president of W. S. Orr Plumbing Co., Inc., Syracuse, N. Y., died September 27 in that city. He had lived in Syracuse for the past 40 years. He is survived by his widow.

New Contractors, Business Changes

Moose Lake, Minn.—William Moore is establishing a plumbing and heating business in the Joseph King Bldg.

Philadelphia—James F. Hallinan, Jr., Walter Hallinan and John Hallinan have registered the firm name of James F. Hallinan, plumbing, at 5218 Vine St.

Cleveland—The Seifried Plumbing Co. has been incorporated by Wallace J. Baker, V. MacCorvie and B. R. Simon.

Philadelphia—Nathan Smilowitz has established a plumbing and heating business at 1517 S. Sixth St. Mr. Smilowitz, formerly a contractor-dealer, is returning to the industry after several years' absence.

San Jose, Calif.—J. E. Turner is engaging in the plumbing and heating business at 571 N. 19th St.

Fredonia, N. Y.—Charles L. M. Rotunda, formerly employed by the W. W. Phinney Plumbing & Heating Co., has engaged in the plumbing and heating business at 43 Doublas St.

Kansas City, Mo.—Edward Lochman, Plumbing & Heating, has been established at 5234 E. 15th St.

Convention Dates

November 17-18.—E.S.A.—The fall annual meeting of the Eastern Supply Assn.; to be held in New York City with headquarters in the Hotel Astor.

December 5-10.—POWER.—National Exposition of Power and Mechanical Engineering, to be held in Grand Central Palace, New York City.

December 15.—Calif.—Annual Hi-Jinx of the Plumbing and Heating Club of San Francisco, to be held at the Embassy Club and at the Lake Merced Golf and Country Club.

January 23-25.—A.S.H.V.E.—Annual meeting of the American Society of Heating and Ventilating Engineers, to be held in Pittsburgh.

May 8-11.—CALIF.—Annual convention of the Assn. of Master Plumbers of California, to be held in Los Angeles with headquarters at Hotel Mayfair.

May 24-26, 1939.—A.G.A.E.M.—Annual convention of the Assn. of Gas Appliance and Equipment Manufacturers, to be held in the Roosevelt Hotel, New York City.

August 21-24, 1939.—A.S.S.E.—Annual convention of the American Society of Sanitary Engineering, to be held in St. Louis.

"The last word in practicality..."

NESBITTS have tried to think of all the questions you could possibly ask about SERIES H Heating Surface, and to answer them all—and many more—in a new Catalog (Publication 232) on this durable, light-weight element of corrosion-resistant copper and copper alloy. This Surface is highly efficient for all applications involving steam-to-air heat transfer. Designed for steam pressures up to 200 pounds gauge. 784 sizes and capacities. Get this catalog and get the facts. John J. Nesbitt, Inc., Holmesburg, Philadelphia, Pa.

SOLD BY LEADING MANUFACTURERS OF FAN-SYSTEM APPARATUS

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News of Men . . . **Meetings . . .** **Companies . . .**

C. S. A. Annual Meeting

- *Fair trade practices and sticker ordinances are important topics at meeting of Central Supply Assn.*

The fifth annual meeting of the Central Supply Assn. (Chicago, October 26 and 27) was best keynoted by the quotation on the back of the printed program: "Cooperation is not a sentiment. It is an economic necessity."

This theme was emphasized by speakers dwelling upon improved relationships among the three branches of the industry—the manufacturer, the wholesaler and the contractor-dealer. To this triumvirate was added by some speakers a fourth factor—the consumer. The talk of H. Merwin Porter, N.A.M.P. president, was based on intra-industry relationships. Frank S. Kaulback, president of the wholesaler association, declared that "there is a better understanding now than at any time in recent years."

Mr. Kaulback voiced the pledge of his association to support those manufacturers whose policies favor the regularly established wholesaler, and to support contractor-dealers who adhere to established practices.

A featured address was the "Practical Application of the State Fair Trade Laws," by Attorney Herman S. Waller. This talk, which was followed by a question and answer session, was particularly timely because of the fact that a resale price agreement between manufacturers of pipe and their distributors (under Illinois law) is contemplated. If this is successful, it is suggested, the fair trade practice provisions may be extended to other products.

Mr. Waller first traced the history of Federal fair trade practice laws leading up to the enabling legislation which allows states to enact fair trade practice acts. Forty-three states now have such Federally-sanctioned laws, he said. Under these acts, he stated, the owner of a trademarked or branded product may enter into agreements with his distributors for a minimum resale price.

Frank S. Kaulback, retiring president

W. E. McCollum, C.S.A. secretary

The next talk on the program for the Wednesday afternoon session, which was open to manufacturers) was by A. B. Anderson, president, Duluth Plumbing Supplies Co., Duluth, Minn. His talk was based upon the question, "Should manufacturers change their prices only at the beginning of each quarter of the year and guarantee such prices against advance for the three-month period?"

The next address, by J. A. Galloup, president, Galloup Pipe & Supply Co., Battle Creek, Mich., dealt with the appreciation of members of the association to those manufacturers who have a definite sales policy favorable to wholesalers.

J. A. Galloup, past president, was a principal speaker.

Bureau Activities

William M. Byrd, Jr., president of Plumbing and Heating Industries Bureau, talked on the work of the bureau. The publicity issued by the bureau "potentially increases your sales and decreases your calls," he declared.

A leading feature of Thursday's program was a talk, "The Advantages of a Sticker Ordinance," by W. H. Kiefaber, president and treasurer, The W. H. Kiefaber Co., Dayton, Ohio. William H. King, Jr., an attorney, explained the effect of the Fair Labor Standards Act.

General discussions and election of officers closed the final meeting. F. H. Steffens, The Hardware & Supply Co., Akron, Ohio, was elected president; A. B. Anderson, Duluth Plumbing Supplies Co., Duluth, Minn., was upped from second vice president to first vice president. Leo. J. Bachle, N. O. Nelson Co., St. Louis, was made second vice-president. E. C. Harbourdt, U. S. Supply Co., Kansas City, Mo., was reelected treasurer.

Editor's note: The C. S. A. meetings were being held as this issue went to press. Additional information on this meeting and the bureau meeting will be found in our December issue.

Bureau Meeting

"The bureau is just beginning its period of greatest usefulness to our industries," said William M. Byrd, Jr., president of Plumbing and Heating Industries Bureau, in his report to the annual meeting of members, held October 26 in Chicago.

George E. Hoffman, manager, plumbing and heating department, Crane Co., was elected president of the bureau for the ensuing year. Other officers elected were William A. Brecht, president, Hajoca Corp., vice president; Charles K. Foster, first vice president, American Radiator Co., Chicago, reelected treasurer; Norman J. Radder, reelected secretary.

O. B. I. Board Meet

The board of directors of Oil Burner Institute held a quarterly meeting in Philadelphia October 11 and 12. The first day's session was devoted to a round table discussion of satisfactory equipment standards for the industry and the method to be followed in drawing them up for submission to the general meeting of oil burner manufacturers which was held on October 12.

At the second day's session G. Harvey Porter submitted his resignation as managing director, effective October 31. He explained that he had been contemplating this step for some time because of the demands of other interests.

Binnall to Sloan

Frederick C. Binnall has become associated with Sloan Valve Co., Chicago, in an engineering and executive capacity, according to a recent announcement. He has a background in our industry both in the United States and with an American company in Germany and other parts of Europe.

Mr. Binnall is noted for his research on the silencing of sound from water flow, especially in connection with the operation of flush valves.

Del. Valley

The Speakman Co. played host to the Delaware Valley Trade Golf Assn. at its last meet of the season, held September 16 at the Concord Country Club, Concordville, Pa. An evening dinner followed the meet. J. Fletcher Wright, W. A. Speakman, Jr., and James Fraser, all of Speakman Co., Wilmington, Del., were in charge of arrangements.

Afternoon prize winners were M. F. Blankin, Harry DeLeon, H. E. Peace, A. V. Gemmill, Al Seither, Russell Kleinman, Charles Wall, Charles Haynes, W. A. Speakman, Jr., J. E. Fleming, E. E. Sutter, Chas. Hackett, James Fraser, H. S. Officer, Ray Groff, Tom Powers, Wm. C. Hanson, J. H. Larmett, J. F. Wright, A. A. Tomlinson, A. W. Hale, Ed. Ball, B. H. Deacon, George Pearce, Robert Savill, Phil Faherty, Cliff Lord, Bob Burns and Frank C. Hackett.

Guest prizes were won by H. Escott, F. H. Elliott and Herbert Weldin.

Some of the scores:

J. E. Fleming	84	8	76
H. S. Officer	96	19	77
L. C. Higgins	98	20	78
E. J. Ball	103	20	83
R. T. Benedict	90	Guest	
B. H. Deacon	94	10	84
J. H. Larmett	110	30	80
Herbert Weldin	109	Guest	
E. W. Fleetwood	94	Guest	
Frank B. Hackett	113	Guest	
Phil J. Faherty	112	22	90
E. M. Crocker	84	7	77
Germer Petesch	110	Guest	
Harold E. Peace	83	11	72
J. F. Wright	95	14	81
C. L. Weber	94	14	80
R. G. Savill	110	24	86
Chas. P. Hackett	100	24	76
Charles Haist	97	Guest	
H. Escott	91	Guest	
George Lynch	102	Guest	
Carl Bamberger	94	Guest	
Frank C. Hackett	108	16	92
E. L. MacWhorter	96	14	82
Charles V. Haynes	93	19	74
Richard Mummers	103	Guest	
Wm. C. Hanson	100	20	80
H. J. Carr	105	18	87

N. Y. Office

Spencer Thermostat Co., Attleboro, Mass. has announced the opening of an office at 110 E. 42 St., New York City. J. N. Derby, Jr., well known in the industry for the past fifteen years, is in charge of the new office and will cover sales in the metropolitan territory.

In addition to his activities in the New York area, Mr. Derby will have charge of stoker control sales.

Adds Territory

The St. Louis territory was opened by N. H. Richfield, Oil Burner Division, American Radiator Co. in a series of wholesaler meetings September 26, 27 and 28. The division now has active branch participation in the Baltimore, Boston, Detroit, Newark, N. J., New York City, Philadelphia, Richmond, Washington, D. C. and St. Louis territories.

Central Golf

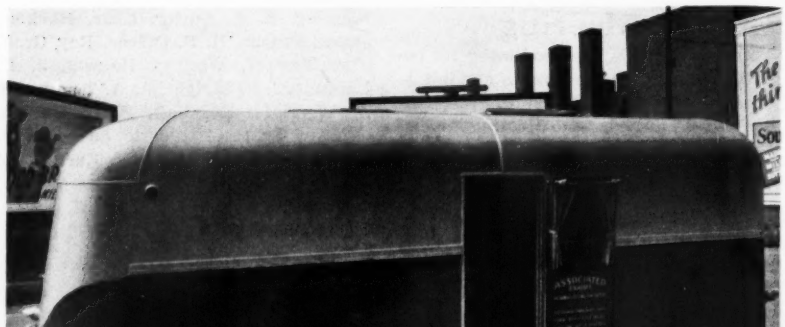
The second of the golf meetings of Central Trades Golf Assn. took place September 27 at the St. Clair Country Club near Mt. Lebanon, Pa. with 80 attending. After the golf, members were entertained at a dinner and floor show.

At a recent golf meet of the Central Trades Golf Assn.: (top row) A. W. Hale, Stanley G. Flagg & Co., Inc., Philadelphia; Edward F. Kunde, vice president, Malone Plumbing Supply Co., Pittsburgh; Henry Rowland, Bridgeport Brass Co.; John Cannon, Standard Sanitary Mfg. Co.; A. E. Bartley, Grabler Mfg. Co.; Alex Hughes, Semler Co.; Mr. Bryner, Stanley G. Flagg Co.; (bottom row) William France, Frick-Reid Supply Corp., Pittsburgh; Floyd Swanberg; N. C. Goza, Pittsburgh Valve & Fittings Corp.

Trailer Exhibit

To demonstrate products to the trade, L. P. Kent & Company, Washington, D. C., employs a trailer in which are displayed the products of five manufacturers. Two complete shower units are installed in the trailer, and there are display panels of other equipment.

The companies represented are Adams Engineering Co., Inc., Chicago; Anderson Products Inc., Cambridge, Mass.; Agnew & Tomlinson, New York City; Portland Iron Works, Portland, Ore.; Fiat Metal Mfg. Co., Long Island, N. Y.



Trailer which houses the traveling exhibit of L. P. Kent & Company, Washington, D. C.

Eastern Trade Golf

Scores at the tournament of the Eastern Trade Golf Assn. held at the Scarsdale Country Club, Hartsdale, N. Y. September 16 were as follows: (The first nineteen listed were winners of prizes.)

Donald A. O'Neil	95	28	67
R. L. Hansen	85	13	72
J. F. Reed	88	16	72
J. B. Creiner, Jr.	89	17	72
C. P. Gabosch	94	22	72
Walter L. Fleisher	95	23	72
Geo. F. Sheehan	96	24	72
H. L. Van Siclen	104	32	72
C. M. Hunt	80	7	73
E. F. Keating	84	11	73
F. A. Murray	87	14	73
R. W. Myer	91	18	73
J. G. McDonald	92	19	73
W. L. Keplinger, Jr.	82	8	74
Harold Townsend	95	21	74
T. M. Kellogg	90	15	75
A. G. Mohrman	91	16	75
R. W. Myer	83	7	76
C. H. Armstrong	83	7	76
Walter Davis	83	7	76
R. A. Wasson	92	16	76
A. P. Keasbey	94	18	76
George Allen, Jr.	99	23	76
L. B. Harrison	106	30	76
J. B. Garfield	84	7	77
F. A. Hubert	86	9	77
Max Hermanna	99	22	77
John Kjerner	81	3	78
T. W. Powers	86	8	78
Ernest Williams	94	15	79
Henry D. Faber	102	23	79
T. Arthur Johnson	85	5	80
W. H. Driscoll	106	26	80
Walter Heibel	125	43	82

No. 45 CADWELL Unit for Hot Water Heating Systems. Springless relief valve guaranteed to prevent water pressure over 30 lbs.

Wanted BY HOME OWNERS RIGHT NOW!

SAFETY...COMFORT ...CONVENIENCE

No. 25 Diaphragm Type, Self-closing, Temperature, Pressure Relief Valve.

The demand for better heating is universal. The time is opportune for you to step in with CADWELL Heating Specialties. They make your selling easier . . . jobs more profitable. They provide protection, comfort and convenience under every condition. Order them at your wholesaler's. If he cannot supply you, write us giving his name.

Write for catalog on your letterhead.

The BEATON & CADWELL MFG. CO.
Established 1894
NEW BRITAIN, CONN.

No. 10 Thermostatic Air Valve.

Install... CADWELL HEATING SPECIALTIES FOR COMPLETE SATISFACTION

No. 10 PERFECTION Floor and Ceiling Plate.

Oil Burner Meet

• *All - Industry committee formed at manufacturer meeting — Committee will draft standards for FHA*

Oil burner manufacturers representing 85 per cent of the volume of the industry were represented at a meeting held in Philadelphia, October 12 to elect a committee to form standards of approval for oil burners to be installed in FHA financed houses. One representative from each of the following companies comprises the committee named at that meeting: Silent Glow Oil Burner Corp., Anchor Post Fence Co., Harvey-Whipple, Inc., Reif-Rexoil, Inc., General Electric Co. (Air Conditioning Division), Williams Oil-O-Matic Heating Corp.

The committee will present its standards at another all-industry meeting. Meanwhile, no further equipment should be shipped to Lehigh University for testing. Equipment already shipped there should not be recalled, according to a statement by Frank H. Dewey, president of Oil Burner Institute. The Federal Housing Administration had set a deadline of October 31 for approval of standards.

History of Negotiations

The history of negotiations with FHA follows:

(1) The Federal Housing Administration made formal request to Oil Burner Institute on July 21 for its cooperation in the establishment of a code of minimum performance specifications for mechanical draft oil burners through certification of a testing laboratory.

(2) Oil Burner Institute augmented its regular standards committee with additional technical representatives and, through a series of meetings in collaboration with engineers of FHA, developed its recommendation for approval requirements for mechanical draft oil burners, and its recommended requirements for installation, operation and service. Lehigh University was selected as the approval laboratory for equipment.

(3) The institute submitted these to FHA and, on August 1, the institute was informed that the standards adopted were acceptable to FHA and was asked what date equipment certified under these standards would be available. This was set as October 1 and later extended to October 31.

The Philadelphia meeting was called to advise more fully all manufacturers in the industry regarding the program. W. F. Brannan, Anchor Post Fence Co., chairman of the O. B. I. standards committee, explained that the new all-industry committee would have for its aid all the information and data already collected by the O. B. I. group.

Participants in the $100,000 golf meet of the Heating, Piping and Air Conditioning Contractors Boston Assn. (reported last month): (top row) Harold Bates, Walworth Co.; Woody Hale, Boston Consumers Gas Co.; John G. Ross, Republic Steel Corp.; George F. Elliott, Walworth Co.; B. E. Horne, president, Watts Regulator Co.; Robert McKeown, Palmer Mullen Co.; L. Lasher, Products Preferred, Inc.; Arnold Abbott, Monroe Co.; (bottom row) T. J. Swan, Emerson, Swan and Goodyear; Ed. Andrews, J. S. Cassidy Co.; Edward Dunn, Crane Co.; Frank Morrison, Mason Regulator Co.; George Allen, Mason Regulator Co.

A group of British enamelers visited the American Rolling Mill Company's Middletown, Ohio, research laboratories and plant recently. They are shown here with several company officials on the steps of the ultra-modern research building

New President

Richard A. Wetherell, treasurer and general manager, was elected president of the C. F. Church Mfg. Co., Holyoke, Mass. at a recent meeting of the board of directors. He succeeds the late Otto Kolstad as president of the company, an affiliate of American Radiator & Standard Sanitary Corp.

Mr. Wetherell became connected with the company in 1920 in a clerical capacity. He was made secretary in 1923, treasurer and general manager in 1929, and vice president and treasurer in 1937.

At the board meeting Vice Pres. Dudley Worth was named general manager of sales. W. W. Baer, manager of the Chicago office, was elected a vice president.

Open-House

- *Three hundred and fifty attend meeting in new showroom of M. J. Gibbons Supply Co., Dayton*

The M. J. Gibbons Supply Co., Dayton, Ohio, celebrated its sixty-third anniversary with an open-house October 12. More than 350 master plumbers, manufacturers' agents and others in the industry attended the evening meeting. The company recently remodeled and enlarged its showroom, and now has one of the most attractive wholesale establishments in the country.

Pres. Michael J. Gibbons introduced C. B. Nash, vice president of Standard Sanitary Mfg. Co., who paid tribute to the founder of the supply company and to the present personnel—whom he has known since boyhood. Charles Redfield, American Radiator Co., well known in Dayton, also spoke.

Henry Blank, N.A.M.P. vice president, complimented both the M. J. Gibbons Supply Co. and their sources of supply for their efforts to promote the sale of more plumbing and heating through the recognized retail outlets. William W. Gesling, state president, made a talk.

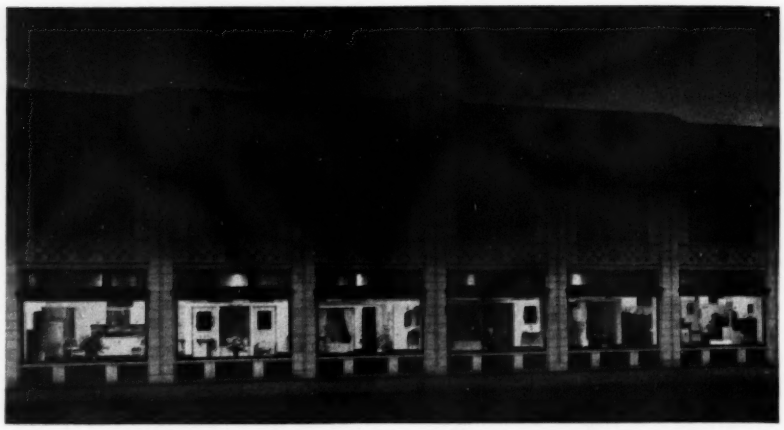
In Family Control

The M. J. Gibbons Supply Co. since its inception has been in control of the Gibbons family. Succeeding the founder, Michael Gibbons, the present head and two brothers, James F. and Arthur M. J., became the active heads until the interests of the other members were purchased by M. J. Gibbons. At the present time another Gibbons, M. J., Jr., is director of the showroom and public relations.

M. J. Gibbons, Sr. has long been identified with various civic organizations of Dayton. He has served as president of the chamber of commerce and is a present member of the board of directors. He is a past president of the board of trustees of Dayton University, resident honorary secretary of the Massachusetts Institute of Technology, and holds an honorary degree of LL.D. from Dayton University.

E. S. A. Annual

The regular fall meeting of the Eastern Supply Assn. will be held in New York City with headquarters at Hotel Astor on Thursday, November 17. Instead of the two customary morning sessions, the meeting this year will be confined to one day with morning and afternoon sessions. The program committee is under the leadership of Cecil W. Farrar.



Front view of the new showroom of M. J. Gibbons Supply Co., Dayton

Every facility for comfort of visitors is made available in the new showroom

This is a view of contractor-dealers and other guests at a meeting to celebrate the opening of the remodeled M. J. Gibbons Supply Co. showroom. It was also the 63rd anniversary of the company

A. G. A. E. M. Meet

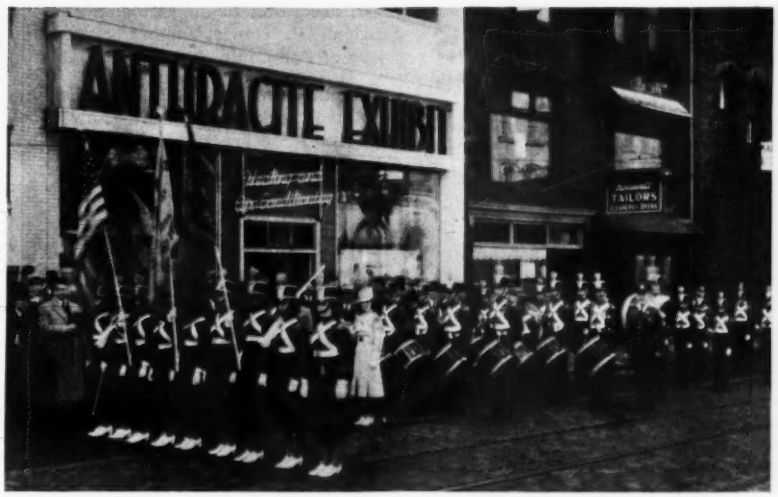
A national sales promotion program for 1939 in behalf of the Certified Performance Gas Range, specifications for which were recently devised by a committee of the gas industry, was adopted by manufacturers of the product at the annual meeting of the Assn. of Gas Appliance and Equipment Manufacturers in Atlantic City, N. J., October 10. The program is to be worked out in detail in the next few months.

Meetings of the various divisions were held on the same day.

E. R. Guyer, Cribben & Sexton Co., Chicago, was installed as the new president of the association, succeeding Merrill N. Davis. Frank H. Adams, Surface Combustion Corp., Toledo, was elected vice president. Mr. Sellman was reelected treasurer.

New Board Members

Members of the new board of directors are: A. P. Brill, Ruud Mfg. Co., Pittsburgh; R. F. Cleary, Homestead Heater Co., Newark, N. J.; Merrill N. Davis, S. R. Dresser Mfg. Co., Bradford, Pa.; W. E. Derwent, George D. Roper Corp., Rockford, Ill.; F. J. Fieser, Ensign-Reynolds, Inc., Mt. Vernon, N. Y.; H. J. Johnson, Remington-Rand, Inc., Buffalo; W. P. Hutchinson, Sprague Motor Co., Bridgeport, Conn.; H. N. Ramsey, Welsbach Co., Gloucester City, N. J.; S. E. Little, American Stove Co., Cleveland; R. G. Logue, Ward Heater Co., Ltd., Los Angeles; H. P. Mueller, L. J. Mueller Furnace Co., Milwaukee; R. L. O'Brien, Detroit Brass & Malleable Works, Detroit; J. A. Robertshaw, Robertshaw Thermostat Co., Youngwood, Pa.; W. F. Rockwell, Pittsburgh Equitable Meter Co., Pittsburgh; W. R. Smith, Continental Water Heater Co., Ltd., Los Angeles.



Parades and bands enlivened the recent "Anthracite Week" in Scranton, Pa. The exhibit of Anthracite Industries, Inc. is in the background

Power Show

With the thirteenth National Exposition of Power and Mechanical Engineering less than two months away, exhibitors are speeding their preparations for an unusually large and comprehensive presentation. Over 260 manufacturers already have engaged space at Grand Central Palace, New York City, where the show will be held December 5 to 10.

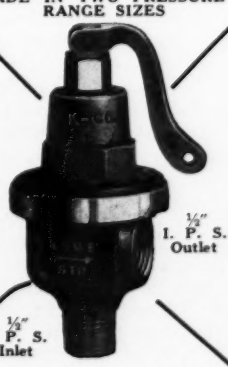
KITSON
Diaphragm Pressure Water Relief Valves
MADE IN TWO PRESSURE RANGE SIZES

Type DPL-22
For Pressure Water Vessels and Lines

Maximum Setting 160 Pounds Per Square Inch (A.S.M.E. Requirement).

Adjustable to lower working pressures, as conditions may require, to prevent the building up of excessive expansion pressure. When operating, the diaphragm permits just enough water to escape to maintain normal setting pressure.

Does not drain the system.



Manually operated lever raises valve for testing or flushing.

Type DPL-22-H
For Cast Iron Hot Water Furnaces

Maximum Setting 30 Pounds Per Square Inch. Operates to release any increase in water volume due to expansion caused by failure of overflow or pressure tank to function.

Protects heater sections against bursting from excessive pressure.

After functioning, valve closes positively without dripping, or dropping of furnace water level.

Manufactured only by
KITSON (K-Co) COMPANY
2409 W. Westmoreland Street
Philadelphia, Pa.

Sold by all jobbers of quality appliances.

Personals

A. C. Seyfarth, previously assistant advertising manager, has been made advertising manager for International

A. C. Seyfarth

Harvester Co., Chicago. Mr. Seyfarth succeeds **Frank W. Heiskell,** retiring after more than 25 years in that position. **C. E. Johnson** has been named assistant advertising manager.

J. C. Arata and **D. H. McDonald, Jr.,** representatives of National Radiator Corp. in Cincinnati for several years, recently organized the Aramac Supply Company, 2822 Spring Grove Ave. The new company will carry a complete line of heating materials and will continue to serve as distributors for National Radiator Corp. in Cincinnati and adjacent counties.

Taurino Martinez Jr., Roma 329, Monterey, N. L., Mexico, for the past eight years manager of the firm, Instalaciones Sanitarias, S. A., has organized a manufacturers' agency to represent American plumbing and heating companies in the Republic of Mexico.

Harry W. Smith, Jr. has been appointed director of industrial gas publicity for the industrial gas section, American Gas Assn.

A. E. Bartley is now representing Grabler Mfg. Co., Cleveland in the Pittsburgh territory.

New Distributors

Sales Representatives, Appointments

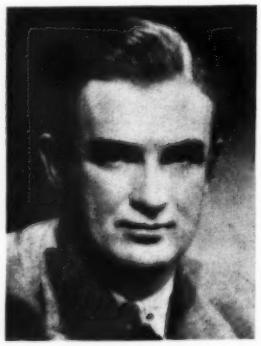
The Pittsburg Water Heater Corporation, Pittsburgh, has announced the appointment of Robert C. Hill as general sales manager.

J. C. Whitlam Mfg. Co., Wadsworth, Ohio has appointed San-Equip, Inc. as its representative in the state of Florida, according to an announcement by Joseph H. Nauss, factory representative of San-Equip, Inc. at Coral Gables.

Semler Co., Jeannette, Pa., has appointed Jack L. Stulsaft, New York City, sales representative for the New York City area.

A. Y. McDonald Mfg. Company, Dubuque, Iowa, has announced that W. H. Hazard has become associated with the organization. O. V. Gibbons has been placed in charge of the Atlantic seaboard territory. W. H. Wallbaum, sales manager, made the announcements.

The Emerson Electric Mfg. Co., St. Louis, has announced the election of W. Stuart Symington as president and general manager to succeed Joseph Newman, who continues as chairman of the board. Oscar C. Schmitt is vice president; Raymond E. Otto, manager



W. S. Symington

of motor sales; John Wright, manager of fan sales; E. L. Splitstone, chief engineer.

Adams Engineering Co., Inc., Chicago has announced the following sales representative appointments: P. J. O'Meara Co., San Francisco — for northern California and western Nevada; Charles G. Wall, Philadelphia— for southern Pennsylvania and southern New Jersey.

General Fittings Company, Providence, R. I. has announced the appointment of Alan Dale as direct factory district manager covering Ohio and Michigan. Howard B. Stitt, Indianapolis has been made selling agent for Indiana. Pres. Stanley G. Cady made the announcements.

Josam Manufacturing Company, Cleveland has announced the appointment of William Hebenstreit as district sales manager in the Kansas City, Kansas territory. Mr. Hebenstreit, who is located at 5115 Walnut Ave., Rosedale Station, has been associated with the industry for a period of years in that section of the country.

William Hebenstreit

Business Changes and New Incorporations

Announcement has been made of the purchase by **Julien P. Friez & Sons Division,** Bendix Aviation Corporation, Baltimore, Md., of the business of Nicostat Products, Inc., Buffalo, N. Y.

The entire physical activity is being moved to Baltimore, and the transfer of personnel includes Nico Borresen, engineer, and G. F. Knowles, general manager. Mr. Knowles will take charge of the gas section of the control instruments department.

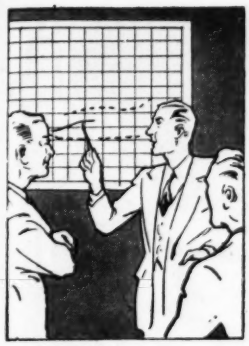
Dearborn Brass Company, Cedar Rapids, Iowa has recently purchased all patterns and equipment of the Troy Brass Works, Troy, Ill. All equipment is being moved to the main plant of Dearborn Brass Company in Cedar Rapids.

Keystone Brass & Rubber Co., Philadelphia has announced that it will move into its new enlarged quarters (Broad St. and Lehigh Ave.) December 1. More than twice the present space will be available.

Reconstruction and modernization of **Bridgeport Brass Company's** pipe and tube mill at Bridgeport, Connecticut, as the next step in a long-range program undertaken to improve all manufacturing facilities, was started this month, according to an announcement from the company.

Additional tube mill equipment will be installed and the entire operation of this division of the company will be broadened through the utilization of space vacated by the moving of rolling mill equipment to the new $4,500,000 rolling mill which was completed last month.

Mitchell Pipe & Supply Co., Everett, Wash., opened a plumbing and heating wholesale business at 2919 Grand Ave. on October 26. An entertainment was held on that evening, with a moving picture on modern plumbing the feature of the meeting.



Business

Was Scare Passes . . . Business Moves Forward . . .

Upward Trend Continues

• *"War scare recession" overcome—Business in our industry slows perceptibly and then moves forward to new high for year*

In spite of the fact that all business was burdened during September with the threat of war, plumbing and heating sales continued to show improvement on all fronts.

In the case of wholesalers' sales we find that September sales ran only 2.93 per cent below September, 1936, whereas in August a drop of 3.99 per cent was shown from August, 1936. However, during September the breach between 1938-1937 sales widened slightly to a drop of 15.12 per cent.

Looking to factory shipments we find that advances in plumbing equipment were especially large. Range boilers showed a wider gain than was shown in any previous months for over a year, while water systems and water softeners showed actual increases over August last year of 9.6 per cent and 20.7 per cent, respectively. Since the latter part of 1937 saw plumbing shipments (with the exception of range boilers) forging ahead of heating, it is somewhat surprising that plumbing should again take the lead.

Heating Shipments Up

Although not as large as plumbing gains, shipments of heating equipment have also seen improvement. For example, steel boilers, showing a drop of 28.49 per cent for the first eight month period of 1938, had declined only 26.15 per cent for the nine month period. Classes 1, 2 & 3 stokers dropped off 20.80 per cent for the eight month period, while combined shipments at the close of the third quarter were only 16.51 per cent below the corresponding period of 1937.

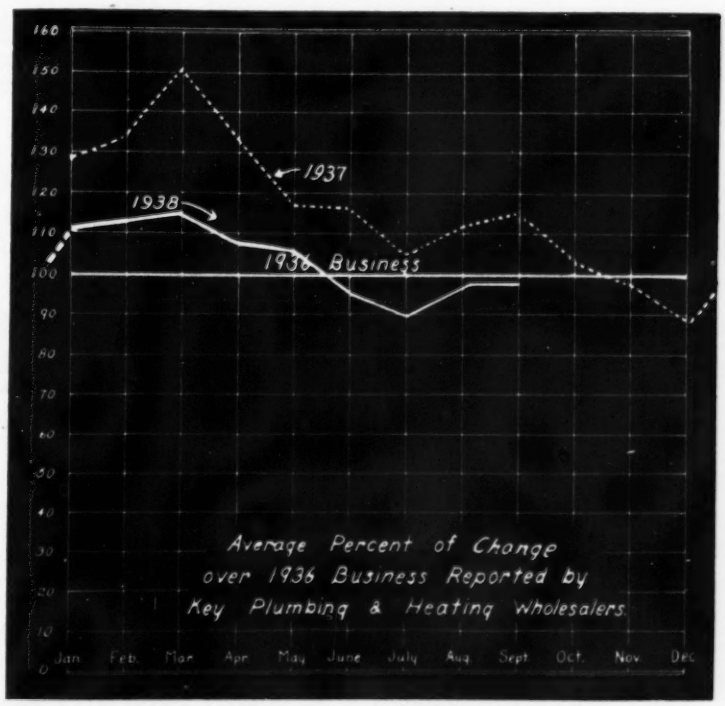
It should be noted that at the close of the third quarter, wholesalers' sales and manufacturers' shipments both stand approximately 17 per cent behind 1937, while prior to this month aggregate shipments were considerably lower than wholesalers' sales. It appears, therefore, that, in the face of a rising market, wholesalers are again beginning to carry reasonably large stocks.

This tendency on the part of wholesalers to again stock up was not felt until about the middle of the year. A recent report of Dun and Bradstreet, Inc., maintained that a decrease of 2 per cent in wholesalers' stocks of building materials during the first half of 1938 was primarily the result of reduction by lumber and hardware wholesalers, while all but the smallest concerns reported relatively consistent small reductions. The same tendency was true of plumbing and heating supply wholesalers, but the reductions by large concerns were so limited as to yield a net curtailment for the trade of less than one per cent, according to this report.

The most important factor in the market at present is the fact that war appears to have been averted, and from all indications at present business on all fronts should continue to advance for some time.

Key Wholesalers

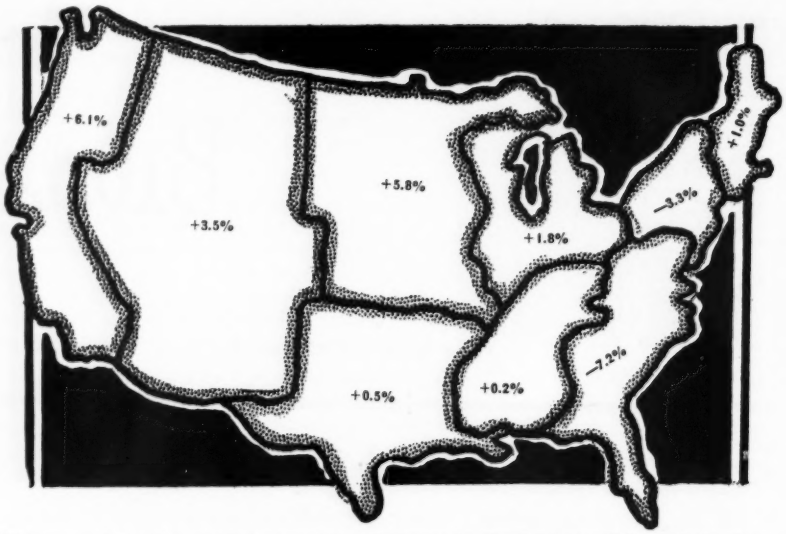
Ninety-five key wholesalers reported an average drop of 2.93 per cent for the month of September from the same month of 1936. Their average gain for



This chart standing at 97.07 shows a decrease of 2.93 per cent from September 1936 and a decrease of 15.12 per cent from September 1937

the first nine months of this year over the same period of 1936 was 0.34 per cent. Fifteen of these wholesalers expect business next month to be better than October of 1936, thirty-five expect it to be about the same, 24 expect a decline and 10 did not comment.

Comparing the above data for 1938 with figures showing the per cent of increase for 1937 over 1936, it is determined that September 1938 plumbing and heating sales ran 15.12 per cent behind September 1937. In a like manner it is figured that the aggregate first 9 months of 1938 were 17.29 per cent behind the corresponding period of 1937.



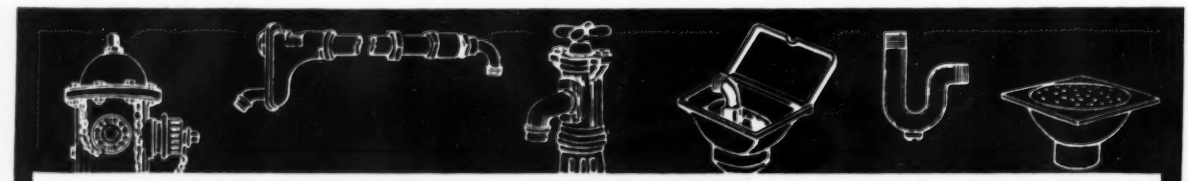
This map shows the average percentage of change in the business of key wholesalers in each section of the country for the first nine months of 1938, compared with the same period of 1936

Metal Prices

(Prices as of Oct. 22, 1938)

New Metal Market:
Electrolytic Copper—Foreign, $11.35.
Electrolytic Copper—Delivered Middle West, 11⅜.
Lead, St. Louis, $4.95 cwt.
Lead, New York, $5.20 cwt.
Lead, St. Louis, Ingot 5 lbs., $5.85.
Zinc, St. Louis, $5.05 cwt.
Tin, New York, 45¾ cwt.
Brass Ingot, CL 11⅜; LCL Delivered, 11⅝.
Yellow Ingot, CL, 9⅛; LCL Delivered, 9⅜.

Scrap Metal (Dealer's Buying Prices)
Composition and steam brass, $7 cwt.
Strictly Heavy Yellow Brass Scrap, Cast, $5 cwt.
Mixed, strictly cocks & faucets (Incl. ball cocks, etc.), 5¼ cwt.
Light Brass, tubes, pipe, old sheets, etc., $4 cwt.
Old scrap lead pipe, etc., $4.40 cwt.
Copper, sheathing and roofing, free of nails, 7¼ cwt.
Copper Boilers, tanks and other light materials, 6¼ cwt.
Soldered Joints, $6 cwt., F. O. B. Chicago.
Block Tin, 38½ cwt., F. O. B. Chicago.

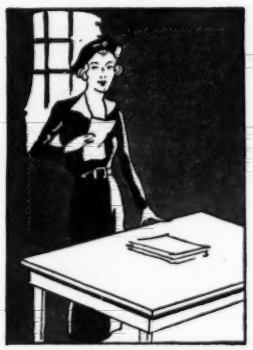


FIRE HYDRANTS -- WALL HYDRANTS -- YARD HYDRANTS
STREET WASHERS -- PLUMBING SPECIALTIES
Specification sheets of any line sent on request
ALL KUPFERLE PRODUCTS SOLD ONLY THROUGH REGULAR WHOLESALE CHANNELS

KUPFERLE SPECIFICATION DRAINS

A new line now ready for delivery. Kupferle Specification Drains with Accompanying Fittings are expertly designed to embody every feature of advantage. Behind them is more than a half century of specialized manufacturing experience and a nation-wide reputation for precision and quality. They are easy to install and give assured satisfaction in service. You are always safe when you specify a Kupferle product.

JOHN C. KUPFERLE FOUNDRY CO. ST. LOUIS, MO.



Women

Conducted by . . . Dorothy Edwards

Phila. Resumes

The Philadelphia auxiliary resumed its regular monthly business meetings on Thursday evening, October 7, after a three-months summer recess. Earlier in the evening officers and members met at the Robert Morris Hotel for a 6 o'clock dinner.

At the business meeting arrangements for coming activities were discussed. Mrs. Ellis Hendricks was appointed in charge of October events; Mrs. Gus. Heinzelman in charge of November events; Mrs. Robert Pflug-Felder hostess for the December annual dinner; Mrs. George Hicks hostess for the card party to be held in January.

After the transaction of business the Pal Club held its annual party, revealing secret pals by presenting gifts. A buffet luncheon enjoyed as guests of Bartlett & Company closed the meeting.

D. C. Opens Season

The first fall meeting of the Washington, D. C. auxiliary was held October 5 with a good attendance. Extensive plans for the coming year's activities were outlined.

A dinner held recently at a local hotel was much enjoyed by members and friends. The remainder of the evening was spent playing games. Another party is to be held at the home of one of the members during the latter part of November.

Dessert-Luncheon

Two guests—Mrs. Kenneth Scott and Mrs. William Overly, both of Ashland—were accepted as regular members of the Mansfield, Ohio, auxiliary at its regular meeting October 2. The meeting was held at the home of Mrs. Charles Arting, 18 S. Benton St. The hostess served a 1:30 o'clock dessert-luncheon to the members.

Mrs. Herman Hoffman, president, presided at the business meeting, following which games were played. Prize winners were Mrs. Frank Frietchen and Mrs. Carl Shambaugh.

Plans were made for the 6 o'clock dinner held October 19 at 188 Ashland Rd. Husbands of the members were guests at this affair. Mrs. Henry Denig, 60 Altamont Ave., was scheduled to be hostess for the next dessert-luncheon, October 27.

S. F. Plans Birthday

Following the customary three-month summer recess, members of the Women's Auxiliary of the San Francisco Master Plumbers Assn. gathered for luncheon and bridge October 6 at 886 Broadway. The tables were tastefully decorated with gourds and autumn leaves. President Mrs. Lena Sand presided. An afternoon of bridge yielded the following winners: first prize, Mrs. Harry Williamson; second, Mrs. Alex. Coleman; third, Mrs. Lena Sand; consolation, Mrs. Charles Welch.

Marking the forty-first birthday of the San Francisco auxiliary, the women are planning a gala luncheon and bridge party at a prominent downtown hotel on November 3. At least two charter members are expected to attend this function.

Elect Directors

The auxiliary to the Progressive Master Plumbers Assn. of Maryland elected the following board of directors at their last meeting: Mrs. William Ganley, Mrs. Walter Boushell, Mrs. B. F. Lubbehusen, Mrs. P. German and Mrs. John Monath.

The auxiliary has scheduled a Hallowe'en dance which was to be held October 29 at the Arbutus Community Hall, Baltimore. Members of the Martinsburg, W. Va., auxiliary were invited as well as members of other nearby associations.

The following served as the committee in charge of the event: Mrs. Charles Wachsmuth, Mrs. Thomas Thaler, Mrs. William A. Ganley and Mrs. Frank Hutchins.

Wives in attendance at ninth annual convention of the Pacific Coast Plumbing Inspectors Assn., held in Berkeley, Calif., October 13, 14 and 15

HEATING EFFICIENCY!

The THERMOTROL and the NO. 7 BELLOWS TRAP operate at the highest efficiency attainable. No steam is condensed that is not required to heat the room to the desired temperature.

Type E THERMOTROL
Pioneer of self-contained temperature control valves. Accurate room temperature control. Controls each radiator individually. For exposed radiators. Fully proved by 30 years of service. Thousands of successful installations.

Sterling Engineering Co.
3732 North Holton Street
Milwaukee, Wisconsin

Without obligation, send me detailed information on Sterling Products for:

☐ Individual Room Control
Direct or Concealed Radiation

☐ Radiator Traps

☐ Vacuum Heating

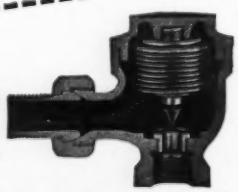
Name .....

Firm .....

Street .....

City ..... State .....

STERLING No. 7 BELLOWS TRAP
Efficient at all pressures from 25" of vacuum to 50 lb. pressure. No. 8 Traps good for pressures up to 100 lbs.
"Built for the Life of the Building"
Designed for radiators, drip points, unit heaters and steam equipment.



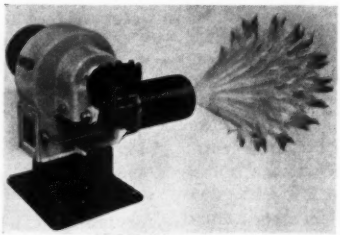
Sterling
ENGINEERING COMPANY
EST. 1918
3732 N. Holton Street, Milwaukee, Wis.

PRODUCTS *for* DEALERS

Improved Oil Burner

The illustration presented here shows a "smokeless flame" oil burner recently placed on the market. The clean flame produced by this burner, it is stated, is due to the balanced mixture between the air and the oil.

By the same token, it is pointed out, this balanced mixture and clean flame mean a more economical consumption of fuel. The clean flame has been achieved through the introduction of two new features in the burner. One is an air guide which, it is indicated, guarantees the smooth feeding of air to the flame. The other



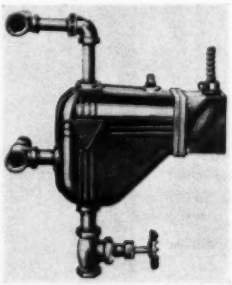
Designed to be Installed in Conjunction with Steam, Vapor and Water Boilers

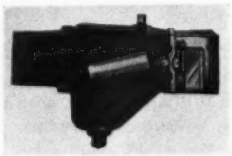
is a device which not only regulates the air flow precisely but accomplishes perfect mixing of the air with the finely atomized oil particles, the announcement states. The shape of the flame, somewhat resembling a sunflower, exposes a great amount of the combustion chamber to the fire. This new burner is designed so that it may be readily installed in conjunction with steam, vapor and water boilers, it is indicated. It is also available as part of a complete heating unit.

This improved oil burner is announced by American Radiator Co., 40 West 40th St., New York City.

New Low Water Cut-Offs

The two illustrations presented here show two low water cut-offs which have just been announced. The





Two Models of Low Water Cut-offs

company states these two models are advanced in style, decidedly different and improved.

Both models, according to the announcement, retain

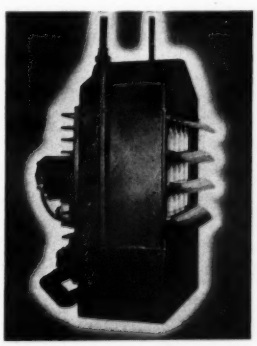
the simplified rigid hook-up feature which was originated by the company's engineers. They also incorporate a shortened copper float with centrally pivoted bellows action. This float is contained in a large, extra-size sediment chamber which has an easy draining feature. A sealed switch, with fine silver contacts, used previously on the manufacturer's equipment, has proved so successful that it has been retained as a feature in these new cut-offs. The cross-sectional view of the "built-in" model shows the deep sediment chamber which runs under the full length of the copper float. It is pointed out that this feature makes the piling up of sediment impossible.

The new low water cut-offs have been announced by Watts Regulator Co., Lawrence, Mass.

Gas Fired Unit Heater and Radiator

The two illustrations shown here picture a gas-fired radiator and a gas-fired unit heater. Gas connections are the only connections necessary to either of these heating units.

The unit heater is described as suitable for many types of commercial and industrial buildings. It is suspended from the ceiling and uses either natural or artificial gas for fuel. It is available in five sizes ranging from 85,000



Unit Heater

Gas-Fired Radiator

to 200,000 Btu. per hour. The gas fires into a combustion chamber, the products of combustion being passed upward through a bank of tubes and out at the rear of the housing. Air is passed around these tubes by means of a fan located on the back of the unit. The assembly includes a safety pilot designed to turn off the gas if the pilot goes out or burns too low to insure ignition. The radiator, also gas-fired, is intended to aid in ventilating by taking air from the floor through the radiator into a chimney or flue outlet. This type is known as the vented type, as opposed to a similar but unvented type, and is recommended for damp climate where additional moisture, supplied by the combustion of the gas, is unnecessary. The radiators are constructed of cast iron. The gas supply is controlled automatically by steam pressure within the radiator.

These new heating units are announced by The Pittsburgh Automatic Gas Steam Radiator Co., 301 Brushton Ave., Pittsburgh.

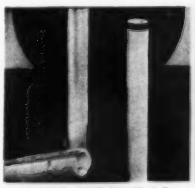
...when you install J-M 85% MAGNESIA PIPE COVERING

HERE'S a fact that packs a real profit appeal for you:

In a nine-room, three-bath house, J-M 85% Magnesia *saved its cost in less than one heating season* through lower fuel costs!

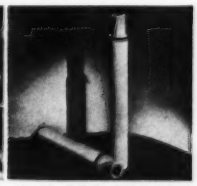
This means that there's a big and profitable market for you to tap in the better home field. For owners of quality homes are interested in first-grade products that will permanently and effectively protect their investments. And by recommending and applying J-M 85% Magnesia on their heating systems you give them what they want . . . the most durable and efficient insulation of the molded type available today. And that means full satisfaction every time.

THREE J-M PROFIT MAKERS



J-M PRE-SHRUNK ASBESTOCEL Pipe Covering. The outstanding cellular type of insulation for low-pressure steam lines and hot-water heating lines.

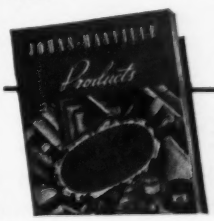
J-M 85% MAGNESIA Pipe Covering and Blocks have the maximum number of dead-air cells to increase natural resistance to heat transmission and to reduce weight.



J-M PRE-SHRUNK WOOL FELT Covering is indented to increase efficiency. Provided with a double-duty liner, this insulation is ideal for use on both hot- and cold-water service lines.

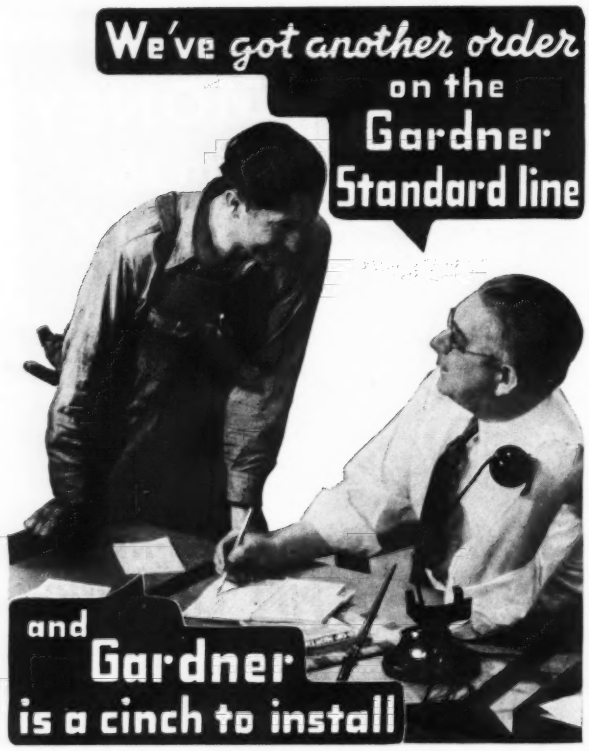
JOHNS-MANVILLE Insulations for Plumbing and Heating Systems...

Sold by leading supply houses



Send for this New J-M Catalog . . .

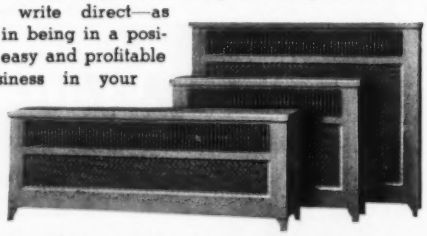
It gives full information on the complete line of J-M Insulations for the plumbing and heating trade. For free copy, write Johns-Manville, 22 E. 40th Street, New York City.



The Gardner *standard* Radiator Enclosure Line is complete

Now, because Gardner offers any radiator enclosure you want in one complete standard line, you can take a *fresh* look at the enclosure business in new building and remodeling. Backed with this big, attractive, well-built line, and provided with prices that lick the pants off custom-built costs, you can go after installations that will pay you the kind of a profit that makes business fun.

You'll find Gardner a key to new business and more sales—as successful plumbers everywhere know who have sold over 10,000 satisfied home owners on Gardner installations. Specializing in enclosure work exclusively since 1928, Gardner is the one strong leader in the industry. When you deal with Gardner you deal with a company that rigidly maintains a policy that favors and protects you—stands behind everything you do. A modern plant—with a complete stock always on hand—is organized to give you prompt service. Ask your jobber for the free Gardner catalog and complete stock price list—or write direct—as your first step in being in a position to get the easy and profitable enclosure business in your community.



Gardner Manufacturing Co.
1311 Barstow St. Horicon, Wisconsin

Silent Flush Valves

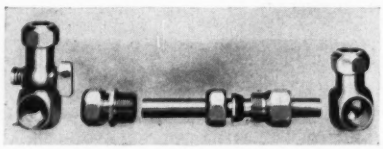
An announcement has just been made to the effect that all flush valves manufactured by Sloan Valve Company now are available with sound quieting equipment. This feature is described as a result of combining principles developed by the Sloan Company, with those developed by Frederick C. Binnall. The new valves are described as differing from any previously marketed for this purpose.

The quieting features are listed as being applicable to Sloan flush valves already in service as well as that company's new valves now on the market.

The announcement comes from Sloan Valve Company, 4300 W. Lake St., Chicago.

Flexible Tubing Connector

The connectors shown in the accompanying illustration have been designed for use with flexible tubing in ⅜ or



Flexible Tubing Connector

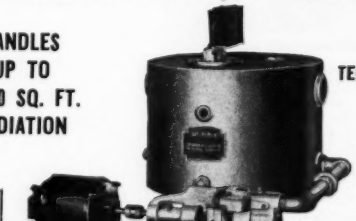
⅝ in. O. D. sizes. It is pointed out that these fittings will connect the flexible tubing with a coupling joint and without flaring the tubing.

BURKS

CONDENSATION RETURN UNITS
WITH
The Famous BURKS Super Turbine Pump

HANDLES UP TO 18,000 SQ. FT. RADIATION

TEMPERATURES UP TO 210° F



SELF PRIMING

ONLY ONE MOVING PART

THESE EXTENSIVE FEATURES

Have made BURKS the most popular Line of Condensation Return Units among Jobbers, Contractors and Engineers everywhere.

(1) Returns water against high boiler pressure.
(2) Will not steam bind—any cycle of operation.
(3) Requires less power at higher pressures.
(4) Low operating cost.
(5) Built-in monel metal screen.
(6) Bronze raceway and impeller with monel metal blades.
(7) Heavy duty ball bearings.
(8) Stainless steel shaft.
(9) Positive impeller adjustment.
(10) Low starting torque.
(11) Balanced hydraulic load.
(12) No metal to metal contact.
(13) No internal pump lubrication required.
(14) Heavy copper bearing steel receivers.
(15) Equipped with double-pole automatic float switch—copper ball float.
(16) Powered by special heavy duty R-1 motor.

YOUR JOBBER or factory will gladly supply Bulletin #104C, price list and additional data.

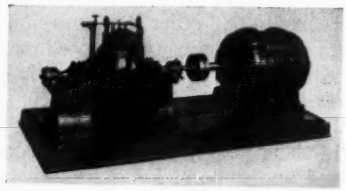
DECATUR PUMP COMPANY • DECATUR, ILLINOIS

The illustration shows respectively, an ell with cock, a male adapter, a female adapter and a 90 deg. ell. The company states these fittings are an outstanding development in making the use of tubing practical for stove connections. With the use of these fittings, the company states that the tubes can be cut to any required length without further working. One of the outstanding advantages of this type of joint, it is indicated, is the positive assurance of permanent tightness and safety.

These fittings are announced by Norton-McMurray Manufacturing Co., 39 S. LaSalle St., Chicago.

Centrifugal Pump

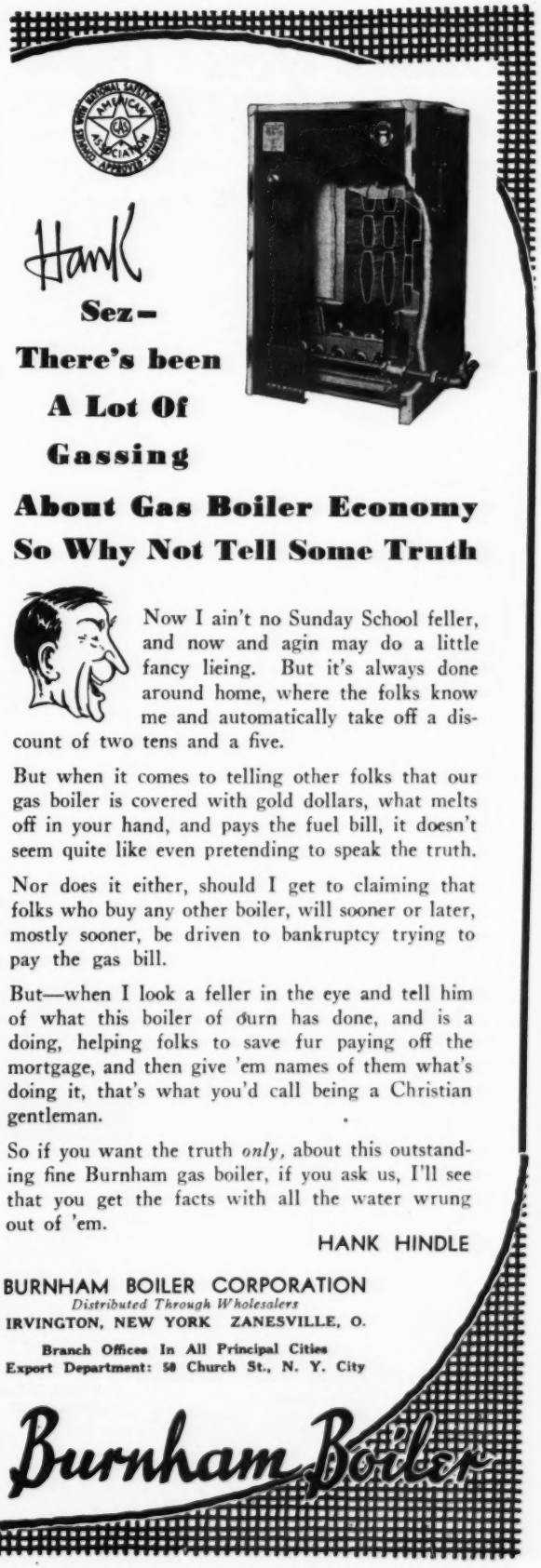
A two-stage, centrifugal pump has just been announced. This pump, designed for heads up to 1,000 ft., is shown in the accompanying illustration.



Two-Stage Centrifugal Pump

Some of the outstanding features listed for this pump are as follows. It is hydraulically balanced with opposed impellers. Centerline support of casing allows for metal expansion when handling hot liquids. Stuffing boxes are

Faster-Better-Heating
KRAMER
UNIT HEATERS
• A quiet, low-cost, handsomely finished unit. Constructed for high pressure, durability and permanence •
Send for Bulletin
KRAMER TRENTON AUTO RADIATOR WORKS
TRENTON, N. J.


Hank
Sez—
There's been
A Lot Of
Gassing
About Gas Boiler Economy
So Why Not Tell Some Truth
Now I ain't no Sunday School feller, and now and agin may do a little fancy lieing. But it's always done around home, where the folks know me and automatically take off a discount of two tens and a five.
But when it comes to telling other folks that our gas boiler is covered with gold dollars, what melts off in your hand, and pays the fuel bill, it doesn't seem quite like even pretending to speak the truth.
Nor does it either, should I get to claiming that folks who buy any other boiler, will sooner or later, mostly sooner, be driven to bankruptcy trying to pay the gas bill.
But—when I look a feller in the eye and tell him of what this boiler of durn has done, and is a doing, helping folks to save fur paying off the mortgage, and then give 'em names of them what's doing it, that's what you'd call being a Christian gentleman.
So if you want the truth only, about this outstanding fine Burnham gas boiler, if you ask us, I'll see that you get the facts with all the water wrung out of 'em.
HANK HINDLE
BURNHAM BOILER CORPORATION
Distributed Through Wholesalers
IRVINGTON, NEW YORK ZANESVILLE, O.
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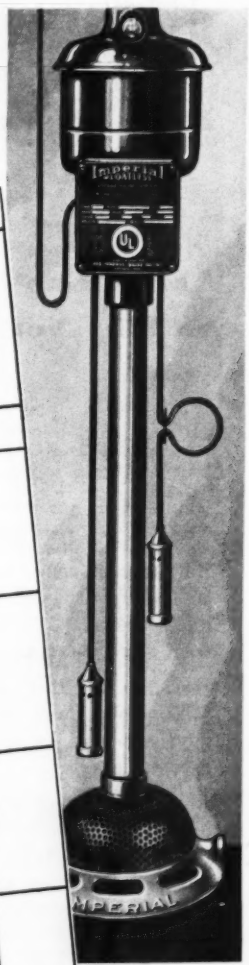
Burnham Boiler

Make Your Own COMPARISONS ON SUMP PUMPS

CHECK IMPERIAL "FLOATLESS" against all others on these basic points of QUALITY - DEPENDABILITY - SALES AID - DISTRIBUTION POLICY . . .



	IMPERIAL "FLOATLESS"	OTHERS
CONTROL SYSTEM	Floatless automatic electric control. (Motor is started and stopped by two stationary electrodes which hang down in sump pit. No float to stick or leak or become damaged.)	
CONSTRUCTION	Brass and bronze throughout.	
STRAINER AREA	80 Sq. in. on Models B to F.; 60 Sq. in. on Model A (These larger strainer areas contribute greatly to freedom from trouble.)	
SALES HELP	Every type of sales aid is available to master plumbers who sell Imperial Floatless, including folders, mailing cards, catalogs, newspaper ads, handbills.	
UNDERWRITERS' APPROVAL	Approved by the Underwriters' Laboratories in the United States and by the Hydro-Electric Power Commission of Ontario, Canada.	
SALES POLICY	Sold exclusively through recognized wholesalers of plumbing materials.	
COST	List prices start at $39.50, subject to your regular discount.	

WRITE FOR YOUR COPY

LET us send you a catalog covering these BETTER sump pumps today. And on your next sump pump order, do what literally thousands of master plumbers are doing today: SPECIFY IMPERIAL "FLOATLESS".

THE IMPERIAL BRASS MFG. CO.
1231 W. Harrison Street, Chicago, Ill.

IMPERIAL "FLOATLESS" SUMP PUMPS

AUTOMATIC ELECTRIC OPERATION

extra deep with provision for water cooling. By-pass piping to relieve stuffing box pressure, thus making it possible to regulate the pressure on the stuffing box. The casing can be economically made of special metals. The pump is designed for high pressure industrial services and is available in capacities to 600 g.p.m.

This new pump is announced by Goulds Pumps, Seneca Falls, N. Y.

New Threading Machine

Recently announced as an addition to the company's line has been the nipple and bolt threading machine shown in the illustration on the opposite page.

Made in two sizes, this machine has a capacity covering all sizes up to 1¼ in. in one model and up to 1½ in. in the other. When stripped of die-head and vise carriage, the machine can be adapted to chamfering, drilling, reaming, boring, tapping and other jobs, it is pointed out. The machines are powered by constant speed motors of 2 hp. and 1,800 r.p.m. Speed changes are obtained with pick-off sheaves. The vise is of the open type operated by a hand wheel conveniently located at the operator's left hand. The vise jaws are of hardened steel, one serrated and one smooth, for quick centering of the work. The jaws are described as adjustable both vertically and horizontally to maintain perfect alignment with die-head.

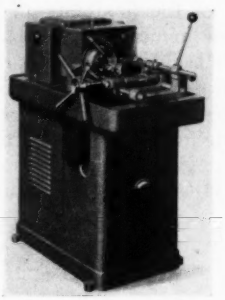
This new bolt machine is announced by The Oster Manufacturing Co., Cleveland.

Made for Long Rugged Service

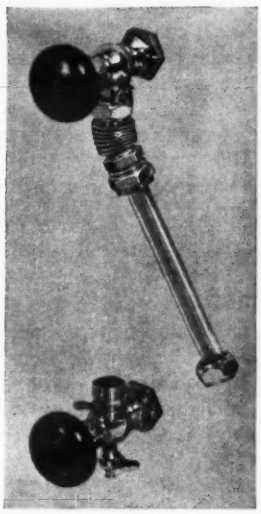
Boiler Tube Cleaners, Flue Brushes, Wire Heater Brushes, Handy Cleaner Brushes, Fire Brooms, Track Brooms.

Tempered Steel
The Worcester line is complete.
Catalog gladly sent upon request.

WORCESTER BRUSH and SCRAPER CO.
10 AUSTIN STREET WORCESTER, MASS.



Nipple and Bolt Threading Machine



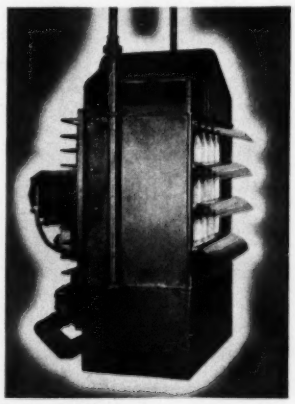
Gauge Glass Installation. Glass is in position to be cleaned

Flexible, Steam Tight Gauge Glass Installation

The accompanying illustration shows a gauge glass installed in a recently announced flexible connection. It is shown in position ready to be cleaned.

It is stated in the announcement that this unit maintains a positive vacuum and is steam tight. Some of the other features listed for the unit are as follows: The nut on the device can be screwed up perfectly tight with-

The PITTSBURGH



Gas

UNIT HEATER

• • •

OPENS THIS

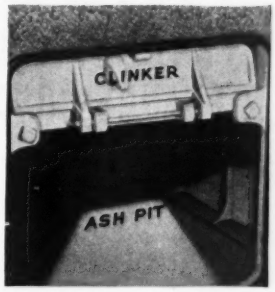
BIG MARKET

FOR YOU

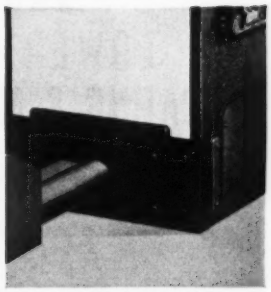
THE Pittsburgh Gas Unit Heater combines all the advantages of safety, economy and durability. It is a unit complete in itself; burns either natural or manufactured gas. No water or steam is needed. The unit may be suspended from ceiling, taking up no valuable floor space. The market for the Pittsburgh Gas Unit Heater knows no bounds: stores, garages, churches, auditoriums, service stations; in fact all types of industrial and commercial buildings are your prospects. Write for further information.

AUTOMATIC GAS STEAM RADIATOR CO.
301 BRUSHTON AVE. PITTSBURGH, PA.

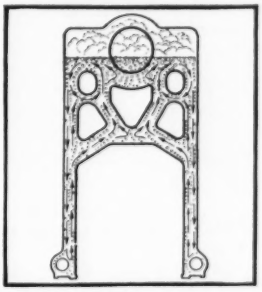
THESE FEATURES...



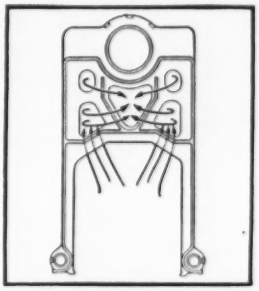
• LARGE base door covers both ash pit and clinker compartments. For easier grate-cleaning and ash removal.



• EXTRA-HIGH base provides ample space for stoker and for proper floor insulation under an oil burner.



• IMPROVED internal circulation in sections and between sections due to extra-large nipples partly below water-line.



• DOUBLE gallery flue design insures more heat-absorbing surface, thus increasing the boiler's efficiency.

PLUS MANY MORE

WILL HELP YOU SELL NEW TYPE G

Kohler

COAL-BURNING BOILER

Add to the above sales makers a domestic hot-water heater built into the back section just below the water-line; adjustable smoke hood; front damper control; toe-opening base door; efficient insulation; attractive finish with imperial blue sides . . . and you have a super boiler for hand firing, stoker or oil burner. Write today for full information on Kohler's new type G boiler. Kohler Co. Founded 1873. Kohler, Wisconsin.

KOHLER OF KOHLER
PLANNED PLUMBING AND HEATING

SPECIFY MILVACO FOR LOWER INSTALLATION OPERATING & MAINTENANCE COST

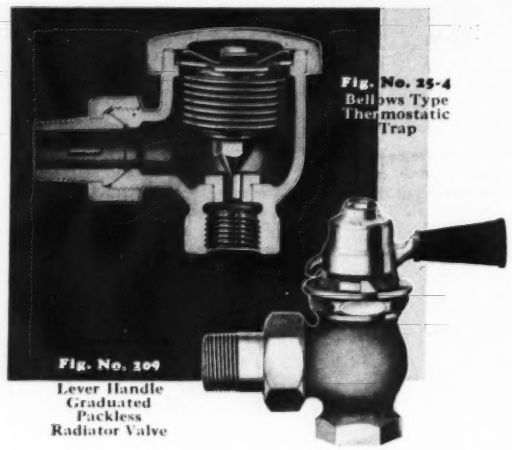


Fig. No. 25-4 Bellows Type Thermostatic Trap

Fig. No. 309 Lever Handle Graduated Packless Radiator Valve

You will save all three ways with MILVACO products, as they are designed and constructed for utmost economy.

Less labor and time needed to make an installation. Quick, easy make-up in the line as all female threads are countersunk and male threads chamfered. No fumbling trying to make connections. Threads accurately machined for tight leak-proof connection, with heavy hexagon female pipe ends insuring ample strength.

MILVACO products are designed for positive operation and longer life—making MILVACO Heating Specialties and APPROVED Bronze Valves considerably more economical.

Leading recognized wholesalers and jobbers throughout the nation recommend and sell the complete MILVACO lines.

There is a MILVACO representative in every territory who will gladly call at your request,—or write us for complete information.

Fig. No. 400 Heavy Pattern Rising Stem Gate Valve

Fig. No. 575 Union Bonnet Globe Valve

MILWAUKEE VALVE COMPANY
MILWAUKEE WISCONSIN

Manufacturers of

Milvaco Heating Specialties and Approved Bronze Valves

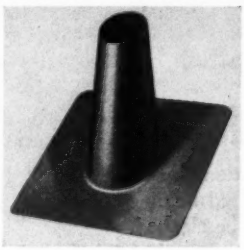
out breakage of glass because of the flexibility of the unit. It can be installed in a few minutes. It is easy to disconnect the gauge glass thus facilitating the cleaning of the glass at any time. Even though the gauge cocks be out of line, the company states that there is no breaking of gauge glass and no leaking around the connection.

This flexible, steam-tight gauge glass unit is announced by Slater Manufacturing Co., 24 Water St., Wakefield, Mass.

New Roof Flashing

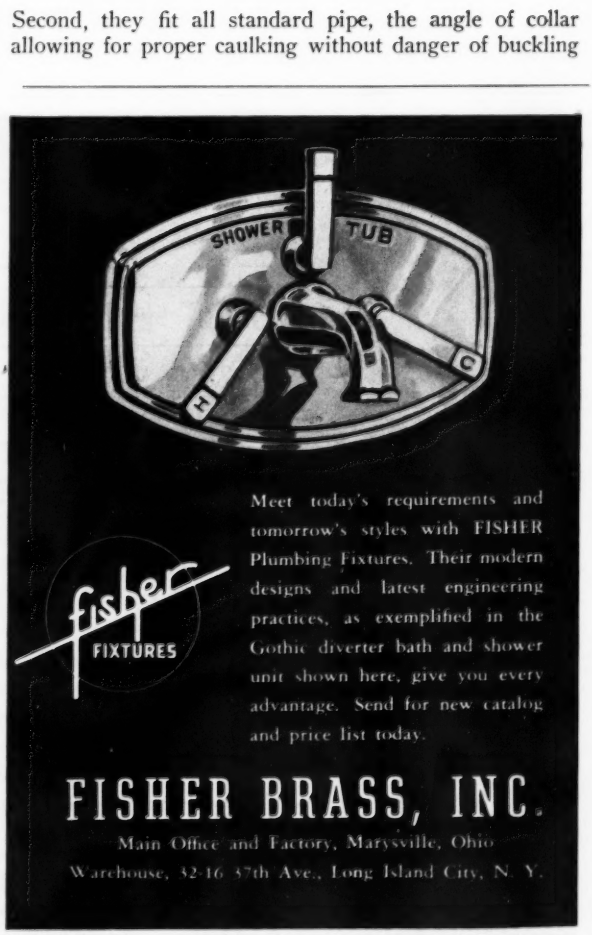
The roof flashing shown in the illustration has been announced recently. It is made in 3 and 4 in. sizes.

These flashings have four outstanding points, the manufacturer states. First, they are designed to fit extra heavy soil pipe without any fitting or trimming of collar.



New Roof Flashing Designed for Flat Roofs or Roofs of any Angle

Second, they fit all standard pipe, the angle of collar allowing for proper caulking without danger of buckling



Meet today's requirements and tomorrow's styles with FISHER Plumbing Fixtures. Their modern designs and latest engineering practices, as exemplified in the Gothic diverter bath and shower unit shown here, give you every advantage. Send for new catalog and price list today.

FISHER BRASS, INC.

Main Office and Factory, Marysville, Ohio

Warehouse, 32-16 37th Ave., Long Island City, N. Y.

or breaking. Third, can be installed on any roof up to 45 deg. angles. Fourth, can be installed on flat roofs with same ease as on pitched roof.

These new roof flashings are announced by The L. R. Oatey Company, 10230 Berea Road, Cleveland.

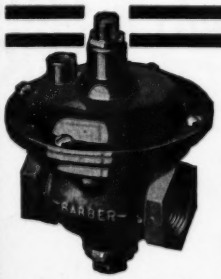
New Tankless Water Heater

The purpose of the tankless water heater shown in the illustration herewith is to heat water instantly when using automatically fired house heating boilers.

Important among the listed features is the claim that

Large Diameter Tubing and Accessibility are Two of the Features of this New Water Heater

rusty water is impossible with this unit. The heater is designed in such a manner that domestic water does not come in contact with any rust-creating metal. Leakage is also said to be impossible. The heater, available in two sizes, has the following listed capacities: When the boiler water is maintained at 180 deg. Fahr. the smaller heater has a capacity of 165 gal. per hour; the larger 210 gal. per hour. When boiler water temperature is maintained at 212 deg. Fahr. the smaller unit has a gal.



Be Sure It's a

BARBER

Gas Pressure REGULATOR

Made in ¼", ⅜", ½", ¾", 1", 1¼", 1½", and 2" sizes.

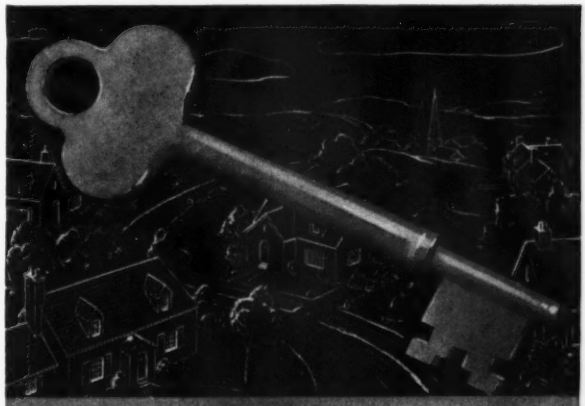
There is no such thing as a "pretty good" Gas Pressure Regulator. A device so important must work within narrow limits and work infallibly. Barber Regulators are built to exact standards of precision, rigidly inspected, and *gas-tested for operation within three-tenths pressure drop.* Neat and compact design, all-bronze bodies, a quality product in every detail. A. G. A. approved, of course. Yet Barber Regulators are moderately priced!

Write for complete literature, prices and discounts on the entire line of Conversion Burners, Appliance Burners, Controls and Regulators.

THE BARBER GAS BURNER CO.

3704 Superior Avenue • Cleveland, Ohio

The Barber Gas Burner Company of Michigan
4475 Cass Avenue, Detroit, Michigan



Here's the Key

TO A MARKET YOU MAY BE MISSING

● Many Plumbing and Heating Contractors are finding that their Crane Pump Line is turning in a substantial volume of business and that, with the national program of electrification, even bigger markets are being opened up.

However, oftentimes a pump sale is only a key to a large plumbing order—for running water to the average home means plumbing—a bathroom and a kitchen. Ask us how Crane Pumps will help develop plumbing and heating business for you.

CRANE

VALVES · FITTINGS · PIPE · PLUMBING · HEATING · PUMPS

CRANE CO. · GENERAL OFFICES: 836 SOUTH MICHIGAN AVENUE · CHICAGO

NATION-WIDE SERVICE THROUGH BRANCHES, WHOLESALERS, PLUMBING AND HEATING CONTRACTORS

IT'S GOOD BUSINESS to look well into any product you sell, but Vent-Rites are the only air valves that permit you to do so—the only valves that can be taken apart for examination or cleaning and be tightly reassembled.

This take-apart construction is but one of the excellent points of Vent-Rites. For example, take apart a No. 2 Vent-Rite Valve. Examine it carefully and note that—

1. Vent-Rite construction does not depend upon a ball or disc to maintain Vacuum in a system.
2. Vacuum is maintained by means of a sensitive, positive acting bellows. This bellows is subjected, internally, at all times to atmospheric pressure which elongates the bellows and closes the vent when the pressure in the valve (but outside the bellows) is less than atmospheric pressure.
3. Venting takes place through an adequate, straight line venting orifice.
4. The size of the orifice is accurately set by means of a modulating adjustment of the valve pin, toward or away from the valve seat.
5. The adjustment is underneath the valve—out of sight, and cannot be disturbed by accident or meddlesome fingers.

It's these features of construction which make Vent-Rites so superior in Performance and insure permanent Balanced Radiation—that is the quick, uniform transfer of steam to all radiators regardless of their number, sizes or distances from boiler.

Write today for attractive, new illustrated booklet describing Vent-Rite Valves and the Vent-Vac System which Revolutionizes one-pipe steam heating.

ANDERSON PRODUCTS
Incorporated
Cambridge, Massachusetts

Be Right with
VENT-RITE

per hour capacity of 315; the larger a gallon per hour capacity of 405.

This new tankless water heater has just recently been announced by Davis Engineering Corp., Elizabeth, New Jersey.

Pressure and Temperature Relief Valve

Shown in the accompanying illustration is a recently announced valve which is designed for pressure and temperature relief. It is designed for relieving excess pressure in range boilers, gas or electric storage heaters, domestic pressure water system, air tanks, etc. It is not suitable for steam, according to the statement of the company.

Relief Valve

Springs in these units are of phosphor bronze, and are described as generous in length and heavy gauge. It is pointed out this insures positive accuracy of adjustment and long life. The model shown in the illustration has an added feature of fusible plug for relief of excess temperature. The valve is regularly furnished set at 60 lb. pressure, but can be frunished with any setting between 35 and 150 lb.

This new relief valve is announced by H. B. Sherman Manufacturing Co., Battle Creek, Mich.

ONE PIECE—NOT A SEAM
IT'LL NEVER LEAK

● Complaints stop when you put in a Brunswick Rubberceptor shower stall floor. Why? Its seamless, one-piece construction of non-oxidizing rubber is positively leak-proof!

Makes happy customers because it's slip-proof—unaffected by ordinary soaps and acids—not harmed by building settling and temperature changes. It lasts longer—yet costs less to install. No lead pan or cementing makes it a one-man, all-plumber job. Sold through Master Plumbers only. Get the facts from your jobber or write us direct.

U. S. Patent No. 2025814 12-31-35

THE BRUNSWICK-BALKE-COLLENDER CO.
629 South Wabash Ave., Chicago, Ill.

Brunswick
RUBBERCEPTOR
COMPLETE SHOWER STALL FLOOR
OF SEAMLESS RUBBER WITH SLIP-PROOF TREAD

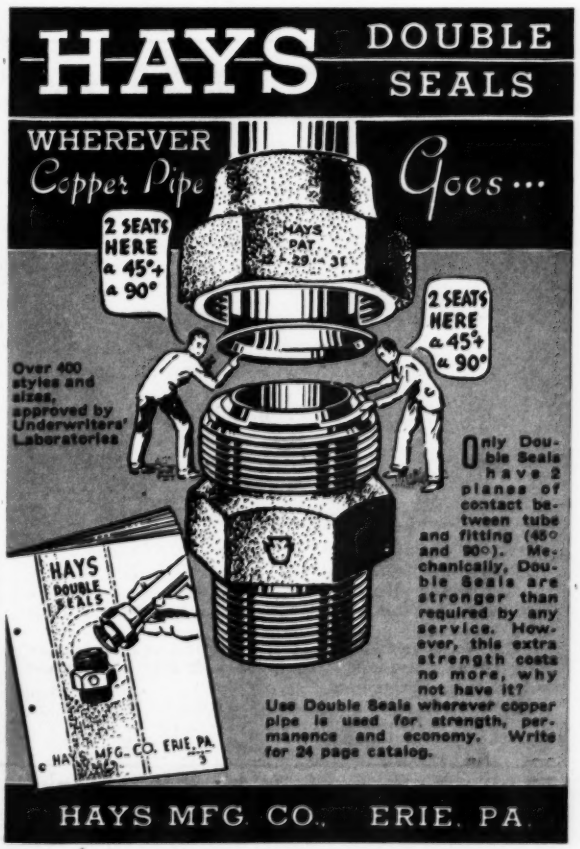
New Information and Aids to Sales

Pumps; Water Systems Complete Catalog

The F. E. Myers & Bro. Co., Ashland, Ohio, has just announced the issuance of its complete catalog No. 71, for the 1939 season. This catalog is complete with list prices, illustrations and descriptions of the manufacturer's line of hand and power pumps, water systems, and other water handling and farm equipment. The book contains 376 pages and has a complete general index in the back. It is completely illustrated and as an additional feature has a complete list of distributors and branch agencies. Salesmen for the company are also listed.

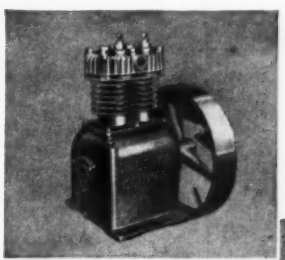
Heating Element Catalog

Describing the company's extended copper heating surface for low and high pressure heating is the purpose of the 48 page catalog just issued by John J. Nesbitt, Inc., Holmesburg, Philadelphia, Pa. Views of integral parts of the heating surface are presented with a brief description of the features of construction of each of these parts. Tables of physical data and tables of capacity are included


HAYS DOUBLE SEALS
WHEREVER Copper Pipe Goes...
2 SEATS HERE @ 45° & 90°
HAYS PAT. 22-29-31
2 SEATS HERE @ 45° & 90°
Over 400 styles and sizes, approved by Underwriters' Laboratories
Only Double Seals have 2 planes of contact between tube and fitting (45° and 90°). Mechanically, Double Seals are stronger than required by any service. However, this extra strength costs no more, why not have it?
HAYS DOUBLE SEALS
HAYS MFG. CO. ERIE, PA.
Use Double Seals wherever copper pipe is used for strength, permanence and economy. Write for 24 page catalog.
HAYS MFG. CO. ERIE, PA.

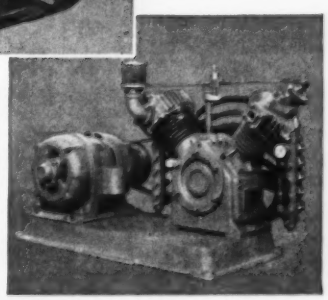
AIR-COOLED COMPRESSORS— GARDNER-DENVER MAKES THE KIND THAT SELL

● Small air-cooled compressors fit a thousand and one industrial needs—paint spraying or other constant pressure control service—filling air tanks—engine starting—in garages and filling stations—engine cleaning, pneumatic lifts and air tools. Gardner-Denver makes air-cooled compressors for all these uses. And Gardner-Denver Air-Cooled Compressors have definite features that make sales *easier to get.* They are designed to deliver dependable, "big compressor" service in small space—they have special alloy cylinders, extra large fin-type inter-coolers, and controlled lubrication—they stand out in any comparison. Let us tell you the whole story. Write today for information. Gardner-Denver Company, Quincy, Illinois.



Gardner-Denver Duplex Single-Stage Compressor.

Gardner-Denver Two-Stage "V" Type ADR Compressor.

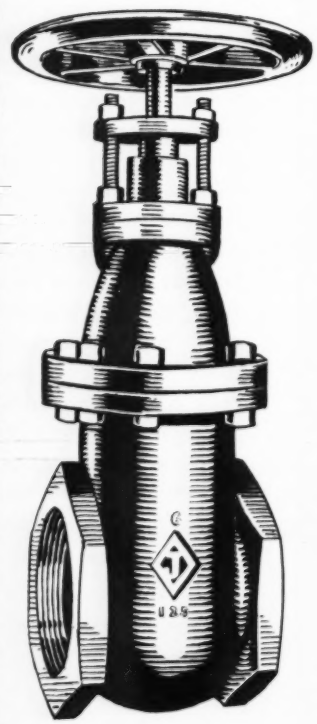


GARDNER-DENVER

SINCE 1859

Jarecki VALVES

What is it you seek in *your* valves? Adaptability? In the Jarecki line you'll find a size and model exactly suited to your needs. Dependability? Back of Jarecki Valves is an 80-year record of integrity. Economy? Every Jarecki Valve is tested *beyond* its working pressure rating in order to assure (1) an extra degree of safety and (2) an added measure of service. *Distributors in principal cities.*



JARECKI
MANUFACTURING CO.
ERIE, PA. U. S. A.

as are also two graphs showing the temperature rise and temperature rise conversion. Layouts of typical systems and details of piping diagrams round out the information.

Mailing Piece on Boilers

Fitzgibbons Boiler Co., 101 Park Ave., New York City, is issuing a mailing piece describing its recently announced steel boiler for bituminous coal stokers. This piece of literature measures 9 by 12 in. and it is printed in two colors. A large sectional view of the boiler is presented. This view points out several of the boiler's outstanding features.

Boiler Specialties Leaflet

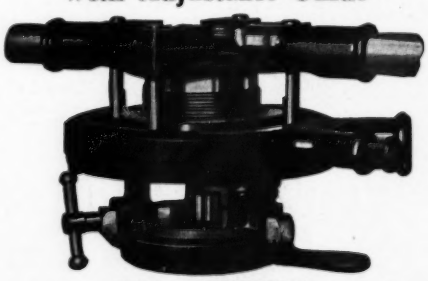
Eight leaflets have just been issued by McDonnell & Miller, Wrigley Bldg., Chicago. These bulletins deal with several of the company's products, among which are a low water cut-off, pressure limit control, electric water feeder, conversion mechanism, etc. Each leaflet measures 8½ by 11 in. and is printed in two colors.

Water Heater Price List

Adams Engineering Co., Inc., 230 East Ohio St., Chicago, has just issued a trade price list relative to its water heater. This price list measures 8½ by 11 in. and includes the model number of the various heaters, their list prices, trade prices and capacities. Two line draw-

NYE TOOLS
"The Kind You Swear By and Never At"

Receding Stock
(IMPROVED)
With Adjustable Guide



NO. 1-A RATCHET TYPE

The added feature of the Adjustable Self Centering Guide, which eliminates all loose bushings and thumbscrews, makes the improved Nye Receding Stock a most desirable tool.

The No. 1 and 1A Stocks are identical except that the No. 1A as illustrated is equipped with a ratchet for use where space is restricted.

Both stocks have a capacity of from 1 to 2 inches.
No. 1 Complete .....Net $10.80
No. 1-A Complete .....Net $13.50

The NYE Tool & Machine Works
4120-30 Fullerton Avenue, Chicago, Ill., U. S. A.

ings of the heater are printed at the top of the price list. These drawings are dimensioned with reference letters corresponding to similar letters in one of the tables presented beneath them.

Condensate Pumps Literature

Sterling Engineering Co., Milwaukee, Wis., has just issued an eight-page booklet devoted to its line of condensate pumps. The back page of the catalog pictures the company's complete line of heating specialties. The body of the catalog describes three series of condensate pumps manufactured by the company; four pages being used to give complete data regarding one of these series. Included in this information are two pages of installation data. This data consists of a page and a half of capacity and dimension tables and a half page of wiring diagrams.

Air and Vacuum Valve Literature

W. A. Russell & Co., Bridgeport, Conn., has just issued a 16-page booklet devoted to its line of air and vacuum valves. Eight features of modern radiator heat are listed on the first two pages of the booklet. The company's balanced vacuum system in particular is explained on the next three pages. The remainder of the booklet is devoted to illustrations of equipment and instructions for installation and maintenance of heating systems.

It Pays To Use
Speakman
SHOWERS & FIXTURES
Speakman Showers and Fixtures are easy to install—render efficient, lasting service. Customers appreciate their beauty and utility—plumbers and architects appreciate their workmanship and faultless operation.
Ask your Jobber for SPEAKMAN
SPEAKMAN COMPANY
WILMINGTON, DELAWARE

A 3 POINT *Advantage!* with **WARCO** AIR and VACUUM VALVES

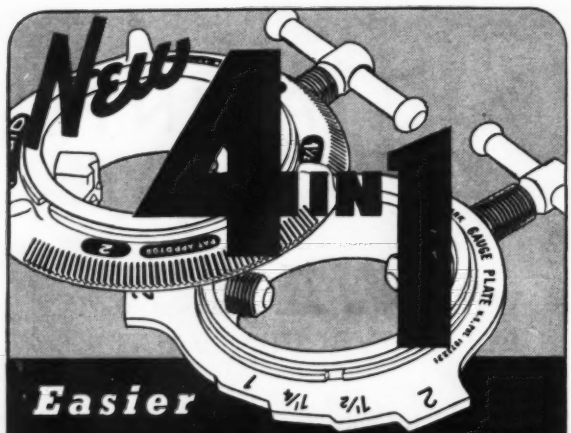
1. Complete Customer Satisfaction.
2. Continuous Repeat Business.
3. Protective Sales Policy.

With every Warco installation you are giving your customers a new degree of convenience and economical heating satisfaction backed by almost half a century of successful manufacturing skill and merchandising ability.

Start now by specifying Warco Air and Vacuum Valves, in surveying properties under the F.H.A. There is a Warco Air and Vacuum Valve to meet the requirements of every one pipe steam heating system. Write for descriptive illustrated catalog, or ask your wholesaler for complete information.

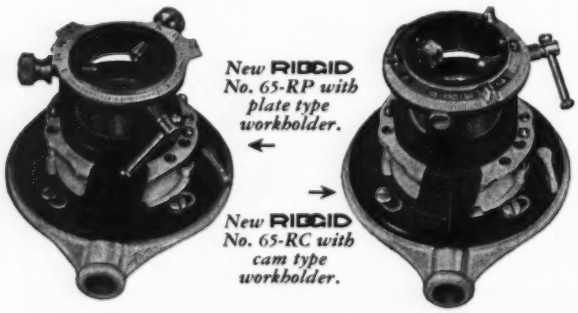
Send for this **BOOKLET** *Today!*

W. A. RUSSELL & CO.
Makers of Better Air Valves Since 1890
BRIDGEPORT, CONNECTICUT
REPRESENTATIVES IN PRINCIPAL CITIES



Rugged new RIDGID No. 65-R All-Steel-Malleable-Alloy Die Stock, *with drop-forged hardened tool-steel cam plate, Threads 4 sizes of pipe with 1 set of chaser dies.* Your choice of 2 new mistake-proof workholders.

New strength and durability throughout. Quick automatic setting to size saves time and loss of chasers. Two speedy workholders, both practically automatic—no bushings. A modern super-efficient tool you'll take workmanlike pride in. Buy it—for quicker easier better threading at lower cost. Ask your Supply House.



New RIDGID No. 65-RP with plate type workholder.

New RIDGID No. 65-RC with cam type workholder.

THE RIDGE TOOL CO., ELYRIA, O.

No more pipe wrench housing repairs

RIDGID housing guaranteed not to break or warp —or we replace it Free.

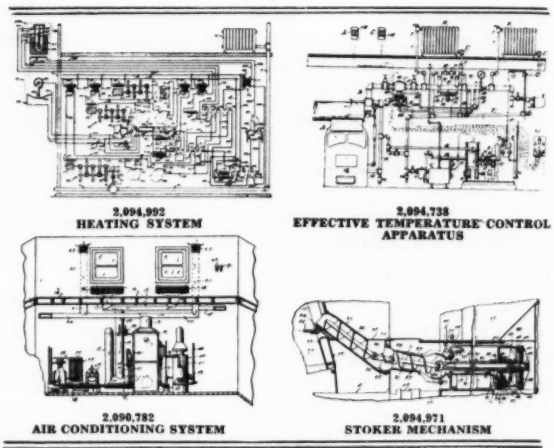
RIDGID PIPE TOOLS

NEWS *of* PATENTS

Heating

2,090,782. Air Conditioning System. Thomas W. Carraway, assignor to Carraway Engrg. Co., Inc., Dallas, Tex.

2,094,738. Effective Temperature Control Apparatus. Clayton A. Dunham, Glencoe, Ill., and David N. Crosthwait, Jr., Marshalltown, assignors to C. A. Dunham Co., Marshalltown, Ia.



2,094,992 HEATING SYSTEM

2,094,738 EFFECTIVE TEMPERATURE CONTROL APPARATUS

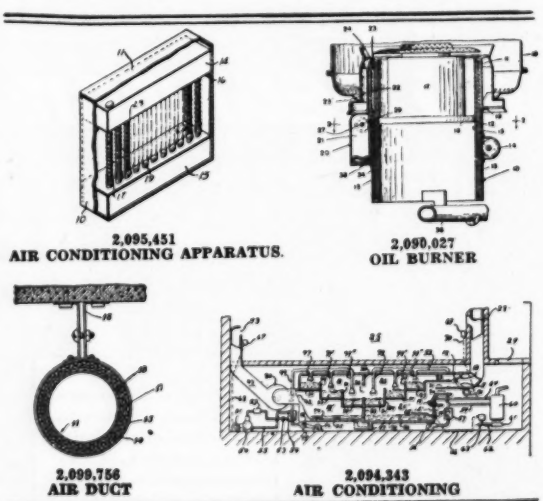
2,090,782 AIR CONDITIONING SYSTEM

2,094,971 STOKER MECHANISM

2,094,992. Heating System. J. S. Locke, Minneapolis, assignor to Minneapolis-Honeywell Regulator Co., Minneapolis.

2,094,971. Stoker Mechanism. Charles J. Surdy, Tuckahoe, N. Y., assignor, by mesne assignments, to The Standard Stoker Company, Inc., New York, N. Y.

2,095,451. Air Conditioning Apparatus. Joseph H. Reynolds, Cisco, Texas.



2,095,451 AIR CONDITIONING APPARATUS.

2,090,027 OIL BURNER

2,099,756 AIR DUCT

2,094,343 AIR CONDITIONING

2,090,027. Oil Burner. Walter R. Brown, Pontiac, Mich., assignor of fifty-one per cent to Marshall E. Smith and Corliss Armstrong, both of Pontiac, Mich.

2,099,756. Air Duct. William R. Seigle. Mamaroneck, N. Y., assignor to Johns-Manville Corporation, New York, N. Y., a corporation of New York.

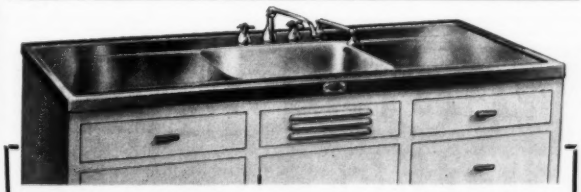
2,094,343. Air Conditioning. Francis R. Bichowsky, Ottawa Hills, Ohio.

Graphic A. C.—

(Continued from Page 52)

because the friction in a duct varies with the square of the velocity so that if the velocity is double, the friction is increased four times. Thus, a duct in which the velocity is 1,000 fpm. will have but ¼ as much friction as one in which the velocity is 2,000 fpm. This is only another argument in favor of low velocities as there is a power saving with the lower friction loss.

It will be assumed that a small air conditioning duct system is to be sized up on the velocity basis using 1,000 fpm. as the maximum air speed at the fan and reducing down to 400 fpm. at the duct connections to the outlets. What is the procedure? The first step is to lay out a diagram of the proposed system marking on it the air quantities in cubic feet per minute desired at each outlet; after this is done the air quantities passing through each portion of duct system are determined by adding up all the quantities supplied beyond the duct portion in question and thus determining the "load" on each section of the pipe. Then the main duct line is selected —which ordinarily may be done by simple inspection— this being the line serving the greatest number of outlets from the farthest outlet back to the fan or, in other words, the line in which the greatest number of changes in velocity will occur. Then the number of such changes—or step-ups in velocity—on this line is counted and the increase in velocity between 400 fpm. at the farthest branch and 1,000 fpm. at the fan (600 fpm.) is



The Cabinet Sink that has *Everything*

Modern homes require modern kitchens—but no kitchen can be really modern unless it has an

ELKAY *"Sturdibilt"*
STAINLESS STEEL
Cabinet or Kitchen Sink

ELKAY Sinks have Everything! They are built of No. 18 U. S. Standard Gauge (.050") genuine 18-8 Stainless Steel welded construction throughout, and reinforced with 14 gauge steel plates and heavy steel longitudinal channels—the heaviest and sturdiest construction on the market.

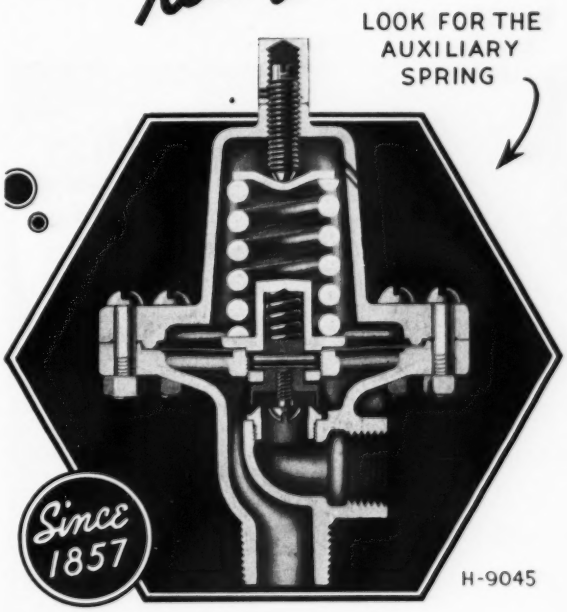
If you want to give your customers the last word in modern kitchen equipment—the kind that will give a lifetime of service —be sure to specify ELKAY "Sturdibilt" Sinks.

FREE KITCHEN PLANNING SERVICE

ELKAY Engineers render FREE Kitchen Planning Service to Plumbers, Architects, Engineers and Contractors. Send us your specifications and we will submit plans and estimates without cost or obligation.

ELKAY MANUFACTURING CO.
4704 W. Arthington Street : : : Chicago, Illinois
ELKAY Products are distributed through recognized Plumbing Wholesalers.

This is no ordinary relief valve!

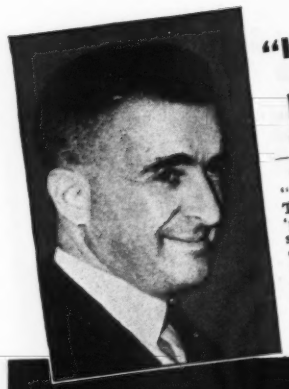


The extremely heavy and rugged appearance of the outside of a Mueller Relief Valve gives a sense of dependability, but it is the inside that really guarantees faithful and accurate performance.

All Mueller Relief Valves have the heavy bolted type construction. This makes the interior accessible without fear of strain or twist upon the diaphragm. The exclusive AUXILIARY SPRING SEATING PRINCIPLE that is found only in Mueller Relief Valves means that there is no heavy spring pressure upon the valve seat—that it will open promptly and easily and close tightly without leakage. And because it is diaphragm operated, it has 35 times more lifting power to raise the seat disc than on a valve where the pressure is exerted through the seat opening alone.

Remember—only MUELLER RELIEF VALVES can guarantee freedom from service calls. Your jobber stocks these valves so use them on all of your installations.

MUELLER CO.
Decatur, Ill.
VITAL SPOT PRODUCTS



"I'VE GOT PRICE COMPETITION LICKED!"

—says P. F. W. Neupert, Raulman Plumbing & Heating Co., Seattle, Wash.

"I push the sale of Never Split Toilet Seats because they've got 'price competition' licked. That steel screw construction convinced our customers that Never Split Toilet Seats cost less in the end than even the cheapest priced seats. By confining the distribution of this seat to Master Plumbers, you have given us a strong weapon against cut price competition."

NAIL THAT CONTRACT

. . . Clinch It with a Toilet Seat That Has These *"PLUS"* Features!

HERE'S a "plus" specification in contract bids that is helping Master Plumbers from coast to coast land many a juicy contract. No other toilet seat—AT ANY PRICE—has this patented Never Split steel screw reinforcement that produces a chip-proof finish and a split-proof seat. Every sale you make of a Never Split Toilet Seat is a permanent advertisement of your shop—because property owners see its flawless finish every day as a constant reminder of an outstanding value they purchased from you.

Never Split Seats can only be sold by Master Plumbers and *legitimate* plumbing wholesalers. Cash in on this "plus" feature by stocking a complete sample line of Never Split seats in sprayed or sheet covered finish—in oak, mahogany, white, or colors to match any bathroom color scheme. (We can also match any plumbing manufacturer's color exactly, if you supply us with the serial number.)

EVERNU HARD RUBBER SEATS

Not a single complaint has ever been received by us on these famous Evernu Hard Rubber Toilet Seats. They have been in use for many years in hotels, office buildings, stores and other public and private buildings throughout the country. Your wholesaler can supply you with Evernu Hard Rubber Toilet Seats.

NEVER SPLIT Toilet Seat

NEVER-SPLIT SEAT CO. Dept. R-12 Evansville, Ind.

SOLD ONLY BY MASTER PLUMBERS

divided by the number of step-ups and the amount of increase for each step is determined.

Beginning back at the last branch where a velocity of 400 fpm. has been assumed, the increased velocity for each step-up is added as the various sections of the duct line are encountered back toward the fan where, if the work has been done correctly, the velocity in the duct at the fan will be found to be 1,000 fpm. The cfm. handled by each portion of the duct is then divided by the velocity desired in the same portion and the result will be the area required in that portion of the duct. As soon as the area has been determined, the duct may be sized by selecting any dimension of duct which has this approximate cross section area either from tables, from charts or by calculation.

Forty-Three Do's—

(Continued from Page 37)

undue competition and often pave the way for larger installations.

Repair job exchanges between dealers—are not uncommon. For example a north side dealer in a large city may turn all south side calls over to a certain south side dealer and vice versa.

Special cost systems—offering a more careful checking on exact costs have effected savings for many dealers, some preferring to have all exact costs worked out in advance for reference on later bids.

"Bath-a-day drive"—is always a go-getter, espe-

WROT COPPER FITTINGS by NIBCO

FOR SUPERIOR SERVICE

New . . . Stronger . . . Lighter . . . Better quality Wrot Copper Fittings developed by NIBCO. Result of years of research, specially designed equipment, a modern plant and a progressive organization. Process fully patented.

Accurate alignments . . . Precision diameters . . . Positive roundness . . . Save installation time . . . Assure perfect solder joints and workmanlike jobs.

Specify NIBCO Wrot Copper Fittings and order through your jobber. Send for FREE illustrated price list.

NORTHERN INDIANA BRASS CO.

1191 Plum St. Elkhart, Indiana

cially when dramatized with window displays. Promoting sanitation is the plumber's job; it pays dividends.

Special estimating systems—allowing a comparison of bid figures against actual cost figures, help correct future bid errors and check source of losses.

Modern bookkeeping—saves the dealer's time, giving him a freer hand to work on sales and promotion.

Office-shop communication systems—allow instantaneous contact with employes, save time and energy. Some dealers would not be without such systems.

Bidding only on jobs that can be handled—is generally better than putting in a great many bids and not following any of them through. One careful bid is often more profitable than many guesses.

Proper care of tools—means money saved. Most successful dealers give their men the best tools, but expect them to be carefully handled.

Compromising with the customer—is generally better than arguing with him. Too often an argument won is a deal lost. Meeting the customer half way may build a future deal.

"In and out" check on equipment—saves money for dealers with several journeymen. It prevents waste and protects all concerned.

Blueprint work tables—have proved to be assets for dealers going out for contracting.

Before and after photographs—of recent installations show the type of work done by the dealer and suggest possible improvements to the prospect.

SURE HOT AIR VALVES

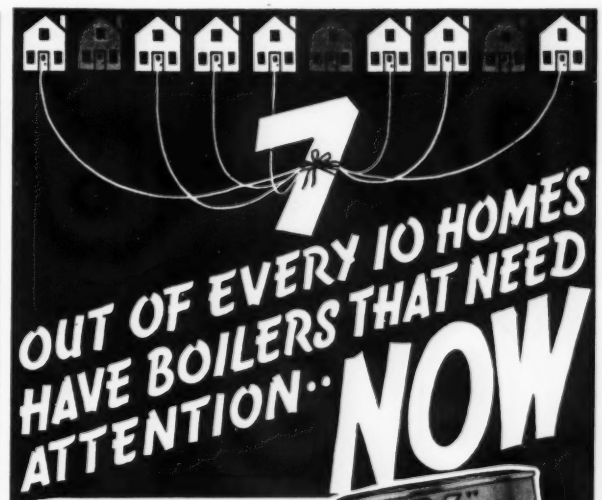
The New "H" Line—Vacuum Type Factory Tested Guaranteed Air Valves. Made Adjustable and Non-adjustable.. Notice the smart appearance and easy flowing lines of the designs shown each with eye appeal and sturdy dependable construction. The complete Sure Hot Line contains Vacuum and Syphon Valves in all classes.

No. H-2A Adjustable Air Port

No. 3A Adjustable Air Port

Other Members of the Sure Hot Line of Air Valves are No. L-2 and L-2A All Chrome Finish, No. 21 and 21-A Polished Nickel and Nos. 1 and L-15 Nickel Plated. All Sure Hot Valves are made Quick Vent in all styles.

THE M. S. LITTLE MFG. CO.
HARTFORD, CONN., U. S. A.
Order from Your Wholesaler



Get Those "X"tra PROFITS In BOILER FLUSHING and LEAKPROOFING Jobs with "X"

Engineers agree that ⅛th INCH OF SCALE on the INSIDE WALLS of a HEATING BOILER INCREASES FUEL CONSUMPTION UP TO 25%. That is why we say—"Scale is Heating Enemy No. 1" and the new, modern "X" FLUSH & RUSTOFF TREATMENT goes to the root of this trouble and positively eliminates it. "X" FLUSH also stops foaming, surging and priming, as it rapidly destroys the grease and oil in boiler water . . . "X" FLUSH breaks down all rust, scale and sludge, and puts it in suspension for easy removal by draining.

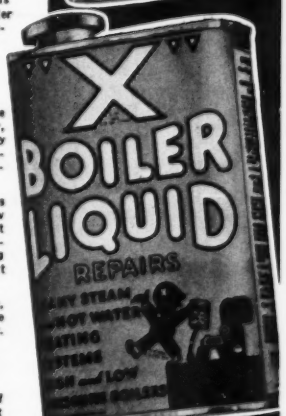
"X" RUSTOFF—the companion product in the novel combination "X" package is placed in the clean, rust-free system after it has been flushed. "X" RUSTOFF retards the reformation of rust and scale.

"X" BOILER LIQUID

"X" BOILER LIQUID is indispensable to every profit-wise heating contractor, plumber and steamfitter, for it finds every leak and seals it quickly and permanently without shutting down or dismantling the heating plant.

Why not get the business and profits that are right in your neighborhood now without waiting for distress calls? 7 out of every 10 owners can be sold by quoting a flat rate or fixed price for flushing the heating system and insuring it against leaks this winter.

If your wholesaler cannot supply you, write us immediately, and we will see that you cash in on this real opportunity.



OTHER "X" SPECIALTIES

"X" PIPEJOIN—Guaranteed, leakproof pipe joint compound for cold and hot water lines.

"X" PIPECUT OIL—For steel, iron, galvanized and brass pipe.

"X" BOILER LIQUID has been manufactured by us since 1916 and sold exclusively through Plumbing Supply Wholesalers. The other products which have been added to the "X" Family have been steadily marketed under this policy of distribution only through recognized legitimate trade channels.

"X" LABORATORIES, Inc.
25 W. 45th St. New York, N. Y.
Factories: Cambridge, Mass.
Toronto, Canada

"X" Laboratories, Inc.
25 W. 45th St., New York City
Gentlemen: Please send me prices and complete information on "X" Heating System Service Products.

Name .....
Address .....
City & State .....
Jobber's Name .....

OUTCLASSING All OTHERS
STANDARD
ROUND "O"
The Tankless Domestic Water Heater that Works SUCCESSFULLY on Hot Water Heating Systems
Doing things heating engineers long said couldn't be done successfully — a domestic hot water tankless heater that is continuously efficient — because the ingenious hook-up equalizes pressures at inlet and outlet openings, thus thwarting circulator's cooling action. Quickly installed and easy to sell because customers like the long wearing qualities of the copper tubing. Ask your jobber or send for full construction details of this and other Standard Heaters — new catalog sheets are free.
STANDARD
HEATER & OIL EQUIPMENT COMPANY
STANDARD ECONOMY
252 CORNELISON AVE.
JERSEY CITY, N.J.

SELECTAIR

AIR FILTERS, humidifier and heat transfer units are all arranged in compact design directly above the boiler in this fine air-conditioning unit... Selectair offers every desired feature for economically heating, air-conditioning and ventilating the modern home... Domestic hot water the year 'round... Oil fired by the Johnson Pressure-Type Burner, Selectair is fully automatic, maintaining constant humidity and temperature in the home whatever the weather may be outside.

Worthwhile territories and Johnson franchises available to aggressive dealers anxious to serve their communities with a complete line. Write us today giving full details as to qualifications.

MEMBER OBI OIL BURNER INSTITUTE

S. T. JOHNSON CO.

940 ARLINGTON, OAKLAND, CALIFORNIA
401 N. BROAD ST., PHILADELPHIA, PA.

THERE'S A JOHNSON OIL BURNER FOR EVERY PURPOSE

Statement of Ownership and Management of "Domestic Engineering" for October 1, 1938

The following is a statement of the ownership, management, circulation, etc., required by the Act of Congress of March 3, 1933, of "Domestic Engineering," published monthly at Chicago, Illinois, for October 1, 1938.

State of Illinois, County of Cook, ss: Before me, a Notary Public, in and for the state and county aforesaid, personally appeared D. J. Hansen, who, having been duly sworn according to law deposes and says that he is the Business Manager of "DOMESTIC ENGINEERING" and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, to-wit:

1. That the names and addresses of the publisher, editor, editorial director, and business manager are:
Publisher, O. T. Carson, Chicago, Ill.
Editor, O. T. Carson, Chicago, Ill.
Editorial Director, Wm. W. Gothard, Chicago, Ill.
Business Manager, D. J. Hansen, Chicago, Ill.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.)

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not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

D. J. HANSEN,
Business Manager.

Sworn to and subscribed before me this 28th day of September, 1938.

L. M. DIXON,
Notary Public.

[My commission expires October 18, 1938.]
(SEAL)

Automatic Heat—

(Continued from Page 41)

If the boiler is rated on a Btu. delivery per hour the rating should be 1,800 sq. ft. × 240 Btu. or 432,000 Btu. per hr.

Sometimes for heating domestic hot water the ratio of 3½ sq. ft. e.d.r. is used for every gallon per hour heated. Applying this in the above instance would give

100 gal × 3½ equals 350 sq. ft. e.d.r.

whereas by calculation 347 sq. ft. was obtained.

With gravity hot water heating the load is calculated in a similar manner except that a sq. ft. of hot water radiation is taken at 150 Btu. instead of 240 Btu. In the

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Hot Water Circulation Accelerator.
A Circulation Pump Without A Moving Part
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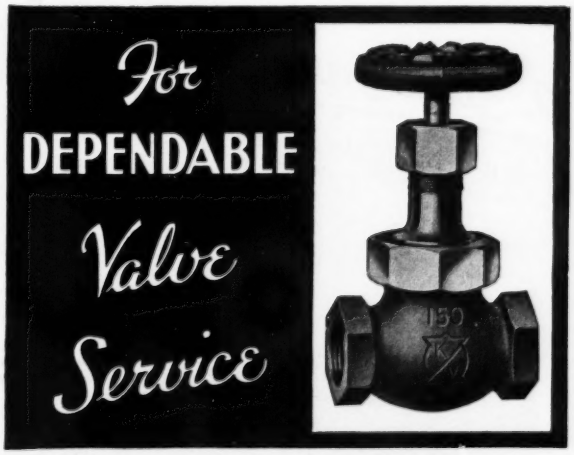

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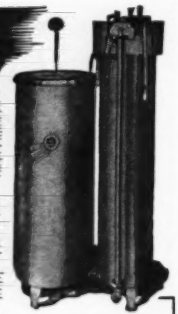

- The patented piston type valve is the heart of UNIFLOW softeners. No metal to metal wearing action. No sticking, no leaks, no mixing of hard water with softened water. The rubber valves, though they last for a long time, are easily replaceable and inexpensive.
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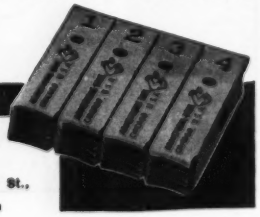

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"The Tool Holder People"
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Eastern Warehouse and Sales: 199 Lafayette St., New York
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case cited for the steam boiler the 1,800 sq. ft. steam e.d.r. could be changed to hot water sq. ft. at 150 Btu. by multiplying by 240 and dividing by 150, thus:

1,800 sq. ft. × 240/ 150 equals 2,880 sq. ft. hot water rating

or the Btu. requirement can be divided by 150 Btu, giving

432,000 Btu. / 150 or 2,880 sq. ft. of hot water.

Still another short cut method is to add 60 per cent to the steam e.d.r. making

1,800 plus 60 per cent of 1,800 or 2,880 sq. ft. hot water.

In the case of *circulator hot water systems* the heat emission from the radiators is assumed as 200 Btu. instead of 105 Btu. owing to the higher average temperature of the water used. In such cases a job having 500 sq. ft. of standing tubular radiation would be computed as follows:

	Btu.
500 sq. ft. × 200 Btu. equals.....	100,000
Piping 25 per cent	25,000
	125,000
Morning Pick-up 25 per cent.....	31,250
	156,250

and the hot water boiler rating based on 150 Btu. would require a hot water boiler rated at

156,250 Btu. / 150 Btu. or 1,042 sq. ft.

In any type of combustion the chimney is a most important factor; it must have sufficient area to carry off the products of combustion and must have the necessary height to produce the required draft and to prevent down-

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THE MASTER KIT
Contains an assortment of 200 washers . . . 8 different sizes . . . in clearly indexed compartments. Can readily be carried in your pocket or kit bag direct to the job.
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Lavelle Rubber Co.
424 N. WOOD ST. CHICAGO

drafts. A chimney with a small area will require a greater height to produce the necessary velocity of the gases than a chimney of somewhat greater area where the velocity of the gases will not have to be as high. The *intensity* of draft should be distinguished from the *volume* of draft as the first may be compared to *pressure* while the second is a *capacity* feature. Fig. 1 shows the heights and areas usually recommended for coal burning boilers.

Remodeling—

(Continued from Page 39)

too—that lie in the field of modernization.

Of San Francisco's reborn office building, Vice President White of the owning company says: "Inasmuch as we were completely changing the exterior appearance of our building and were installing modern woodwork, floors and elevators, we decided it would be a serious mistake to permit old plumbing fixtures to remain in an otherwise new building.

"Although the installation of new fixtures would ostensibly give us a modern plumbing installation, we, as owners, realized that the hidden factors were even more important than were the exposed. So we made a thorough inspection of all plumbing lines, which generally speaking were installed in 1896. We removed all those that showed any signs of wear and replaced all risers and laterals necessary to give us a truly modern installation. We now have as modern an installation as any.

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As you know, Alberene is natural quarried soapstone. Acid-, heat-, and wear-resisting. It can be shaped, sawed and fabricated in any desired shape or form without danger of chipping or spalling.

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Quarries and Mills at Schuyler, Va.

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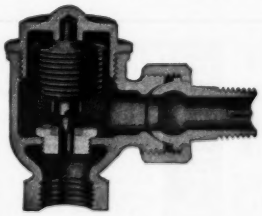
Sell STEAM SAVINGS with Webster Trap Attachments



Plan now to help your customers get "full-time" for their heating dollars. Show prospects how steam loss through *obsolete and worn-out radiator traps* can be quickly remedied by Webster Trap Attachments. They are easily installed right on the job.

Your Webster Representative will help you determine what heating troubles need correction and how steam savings can be made. Write for new booklet, "Save with Webster Trap Attachments." It will help you get this profitable business.

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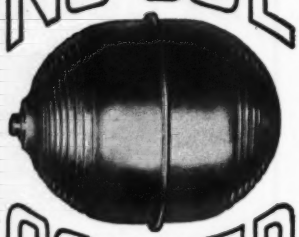
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The next best is a "Regular" gasoline which does not have a lead compound added to it.

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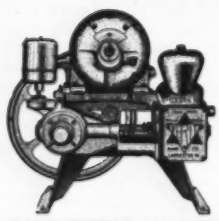

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WATER SYSTEMS • SUMP PUMPS • HOT WATER CIRCULATORS

EVERITE PUMP & MFG. CO., Inc.
LANCASTER, PENNA.

Codes—

(Continued from Page 51)

Plumbing," to be found in "Recommended Minimum Requirements for Plumbing," better known perhaps as the Hoover Report. This is a 280-page publication published by the Federal Government, and obtainable for 35 cents by writing to the Superintendent of Documents, Government Printing Office, Washington, D. C.

Two of the fundamental statements are as follows:

"Plumbing regulations can not legally contain requirements which do not, either directly or indirectly, prevent injury to health, safety, morals or the like. No requirements can legally be made which have to do merely with economies of construction, with benefits to the house owner or occupants, or with benefits to manufacturers, traders, or laborers, for the right and only legal use of the police power is to protect against injury.

"The design of plumbing systems is properly within the scope of legal regulation in so far as it has to do with the escape of solids, liquids, or gases from, or the access of vermin and insects to drains and sewers, in such a way as to endanger health, and in so far as a safe and adequate supply of water to the fixtures is concerned."

Increased expense of installation of correct plumbing as compared with inferior and unsafe plumbing is largely the reason for obstructive efforts against the establishing of a new code. The obvious thing to do, it seems to us, is to trim the installation down as far as possible, to bring down its cost. Some suggestions that occur to us are the following:

Do away with main trap and fresh air inlet. Such trap and inlet are seen in Fig. 1, but most codes at the present time do not call for their installation, and it is a question whether the plumbing system is not better without the main trap.

It has been demonstrated beyond question that the 3-inch stack is ample for all dwelling installations. Therefore, instead of calling for 4-inch soil stacks, make it 3-inch. Architects can help out the situation by grouping fixtures so that dwellings will often require only one stack. This practice is shown in Figs. 2 and 4.

The trouble in many instances has been that in trying to economize, economy has been applied principally in doing without venting. This it seems to us, will largely defeat the results that a newly established code should be expected to gain.

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CINCINNATI, OHIO

Questions—

(Continued from Page 55)

Hot Water Problem

- *This inquiry concerns means of avoiding temperature fluctuations on a number of mixing faucets in a beauty parlor. The solution will be interesting to many contractors who have encountered this same problem.*

To the Editor:

A beauty parlor has a problem which is causing us some trouble and we wish you would tell us what you think the water temperature should be as well as the best layout for the hot water supply system. As shown in Fig. 2, this parlor consists of 10 booths and the present piping system is not giving entire satisfaction. In the case of booths Nos. 1 to 5 inclusive the use of more than one lavatory at a time causes a fluctuation in the temperature of the water in the first lavatory during the time the second lavatory is being turned on and temperature regulated by the operator. As soon as one of the

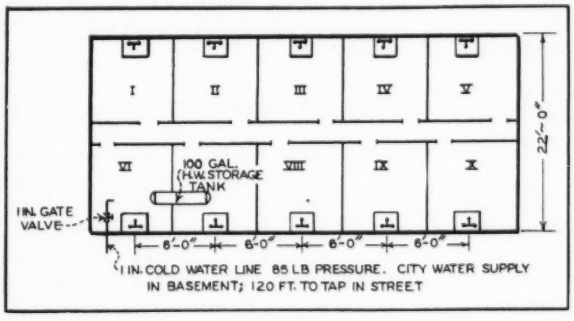


Fig. 2—Here is the beauty parlor layout about which the problem of water temperature fluctuation centers

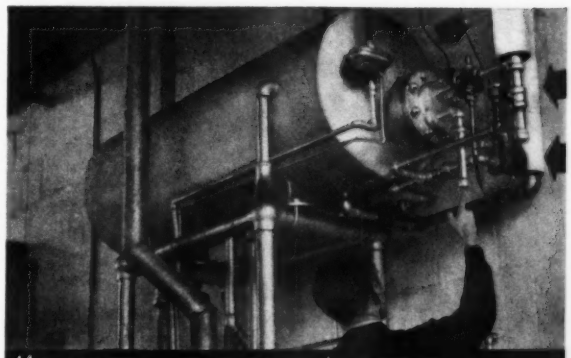
lavatories is turned off another fluctuation of temperature occurs in the lavatory which is still running.

The parlor is on the first floor with a 1 in. cold water line coming in and being piped to each lavatory on either side through a separate ¾ in. branch run along the sides with ½ in. fixture connections from the ¾ in. mains. The 1 in. cold water runs full size to the storage tank with ¾ in. mains for hot water run to each side and fixture branches also of ½ in. size. The water temperature is now regulated by a thermostat set for 150 deg. Fahr.

Colo. Q. L. K.

To the Reader:

The change in temperature caused in one lavatory by the turning on or shutting off of another fixture on the same line undoubtedly is caused by the drop in pressure in the line when the additional fixture is turned on and the rise in pressure when it is turned off. Whether this occurs in the hot water line or the cold water line depends on whether the new fixture is using more hot water than cold water or vice versa. As a result, if the second fixture is opened up almost entirely with cold



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Sarco Temperature Regulators pay for themselves quickly by preventing wasteful over-heating, by protecting the quality of heat processed goods—by saving steam, labor and overhead.

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water there will be a temporary reduction in pressure on the cold water side and more hot water, relatively, would enter the first fixture, whereas, if the second fixture were opened up almost entirely with hot water, there would be a reduction in pressure on the hot water line and a correspondingly lesser amount of hot water delivered to the first fixture with a resulting drop in temperature on this fixture. In closing down a fixture the results

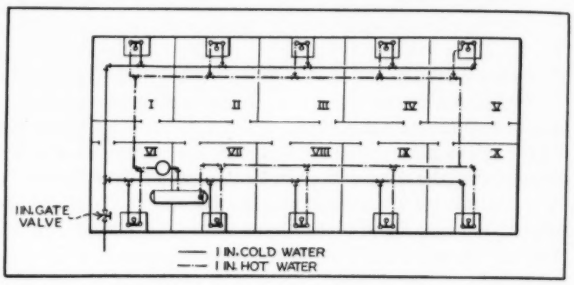

Fig. 3—The changes suggested to correct this reader's difficulty are shown here

would simply be reversed and the temperature changes would be in accordance with whether the second fixture were using a larger amount of hot water than of cold water or the opposite.

SOLUTION SUGGESTED

To overcome this action as far as possible without involving too much expense, we suggest that the hot and cold water branches to each side be made 1 in. size and that they be arranged in a complete circuit as shown in the accompanying drawing in which case the fixtures opened up would be fed water from each side of the loop and the pressure drop due to friction would be less than ¼ what it is at present with the dead-end branches. Moreover we should provide a small circulator to circulate the hot water through the loop so that this water and the water in the tank would all be of the same—or practically the same—temperature. This will obviate the necessity of drawing cooled water out of the end of the hot water dead-end branches as must be done under the present arrangement. If this circulator is controlled from a push button on the first floor it may be started

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DRILL SENSATION OF THE CENTURY
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Fig. 365
THE PAINE COMPANY
Dept. 18B—2947 Carroll Ave., CHICAGO
48 Warren Street, NEW YORK

about 15 minutes before the opening time and all of the water in the line will be hot ready for use. It would be necessary, of course, to draw off the small amount of water in the ½ in. branches but this is more or less unavoidable and requires only a very short time. A layout of this system is indicated in Fig. 3. The temperature of the water should be set as low as permitted by the shop requirements.

Questions For READERS

Many correct answers were received in reply to the September Readers' Question. The following reply, however, was selected for its thoroughness and clarity. The question was:

A contractor is required to run a storm sewer from a building having a roof area of 10,000 *sq. ft. to a point* 1,000 *ft. distant down a slight incline which will permit a pitch in the line of* 24 *in. per* 100 *ft. What size sewer is required? How much larger would the sewer have to be if the maximum pitch available were only* 6 *in. per* 100 *ft. of run?*

The answer to this question will depend somewhat on the maximum rate of rainfall which occurs in the locality in which the sewer is to be located but in most cases this rate will not exceed 6 in. per hour. With a building area of 10,000 sq. ft. and rain falling at the rate of 6 in. per hour as a maximum the number of cubic feet of water which will have to be carried away from the building will be

10,000 sq. ft. × 6 in. / 12 in. = 5,000 cfh.

and reducing this to cubic feet per minute by dividing by 60 minutes we have

5,000 cu. ft. / 60 min. = 83⅓ cfm.

The flow in cubic feet per minute may be changed to gallons per minute by multiplying by 7.5 gal. per cu. ft. or

83⅓ cfm. × 7.5 gal. = 625 gpm.

While this flow will not be sustained for any long period, it may be sustained for a 5 min. or longer and if the sewer is not to back up during this time of maximum

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ADAMS ENGINEERING CO. Inc.
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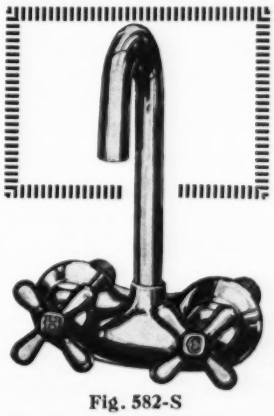

Fig. 582-S

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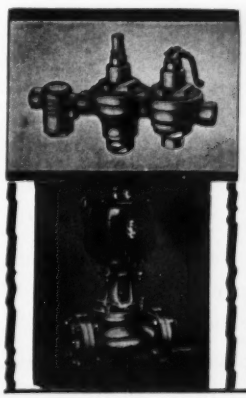

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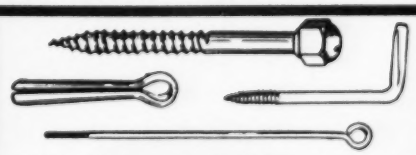

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350 ROOMS WITH BATH FROM **$2.50**

One of the 16 ALBERT PICK HOTELS

Hotel Oliver

flow the size of pipe used must be sufficient to carry off the water at the height of the downpour.

According to tables for the flow of water in sewers running full it will be found that with a grade of 24 in. per 100 ft. of run, a 6 in. line will carry water at the rate of 364 gpm. so that this is not of sufficient size but an 8 in. line will carry the water off at the rate of 750 gpm. and this should prove adequate. Of course in localities where the maximum rate of rain fall exceeds the 6 in. per hour rate a somewhat larger size would have to be used.

If the grade of the line is made only 6 in. per 100 ft. of run, then—according to the flow tables—the size would be more than a 9 in. line could carry but less than that for a 10 in. line showing that a 10 in. pipe would have to be used.

How Would You Answer This Question?

In a contemplated apartment house a hot water tank is found to require 500 gal. capacity when sized on the peak hour demand with 25 per cent of the water retained in the tank. An indirect heater or a heating coil in the boiler circulating to and from the tank has been selected which has sufficient capacity to heat the tank in a three hour period. Assuming that an instantaneous hot water heating coil is to be substituted how much should the rating of the steam boiler be increased to take care of the instantaneous coil?

This is a water heating problem of an extremely practical nature. DOMESTIC ENGINEERING will publish and pay for the best answer received. Watch for the answer in the January issue.

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Just a few blocks from Grand Central Terminal and across the street from Grand Central Palace, at the Belmont Plaza you're right in the center of things.

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RALPH HITZ, PRESIDENT

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RATES: Eight cents per word, including heading and address. For keyed address count seven words. Minimum advertisement, $2.00 per insertion. Cash must accompany order. For rates on bold face advertisements in this section write to Classified Advertising Department, DOMESTIC ENGINEERING, 1900 Prairie Avenue, Chicago, Illinois.

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CREST — THE SPECIALTIES THAT are special—Invites your application as salesman direct to Master Plumbers. Write fully and confidentially, giving your complete selling experience. Address CREST MFG. CO., 463 48th Ave., Long Island City, New York.

SALES ENGINEER THOROUGHLY familiar with the sale of unit heaters. Man qualified to direct sales and aid with product engineering. Must have had extensive experience in forced draft heating installations, understand piping and installation layouts and procedure. Background of sales and familiarity with trade. Salary, excellent position with opportunity for advancement offered qualified executive. Address Key 543-D, "Domestic Engineering," 1900 Prairie Avenue, Chicago, Illinois.

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Manufacturers Representatives

20 years contact with jobber outlets in the Metropolitan Territory.

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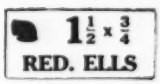

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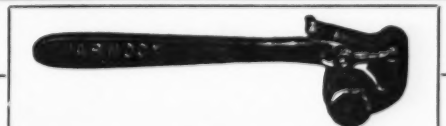

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The Warnock wrench is easy to adjust. The strap is arranged in such a way that it can be drawn absolutely tight in *one* movement. Notice, too, that this strap is triple folded at the point of greatest strain.

For chroma, brass and nickel plated pipe

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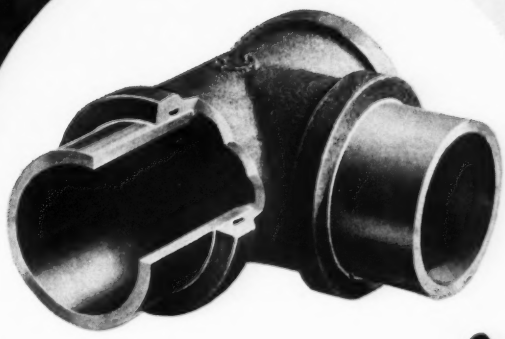
YOUR PIPING!



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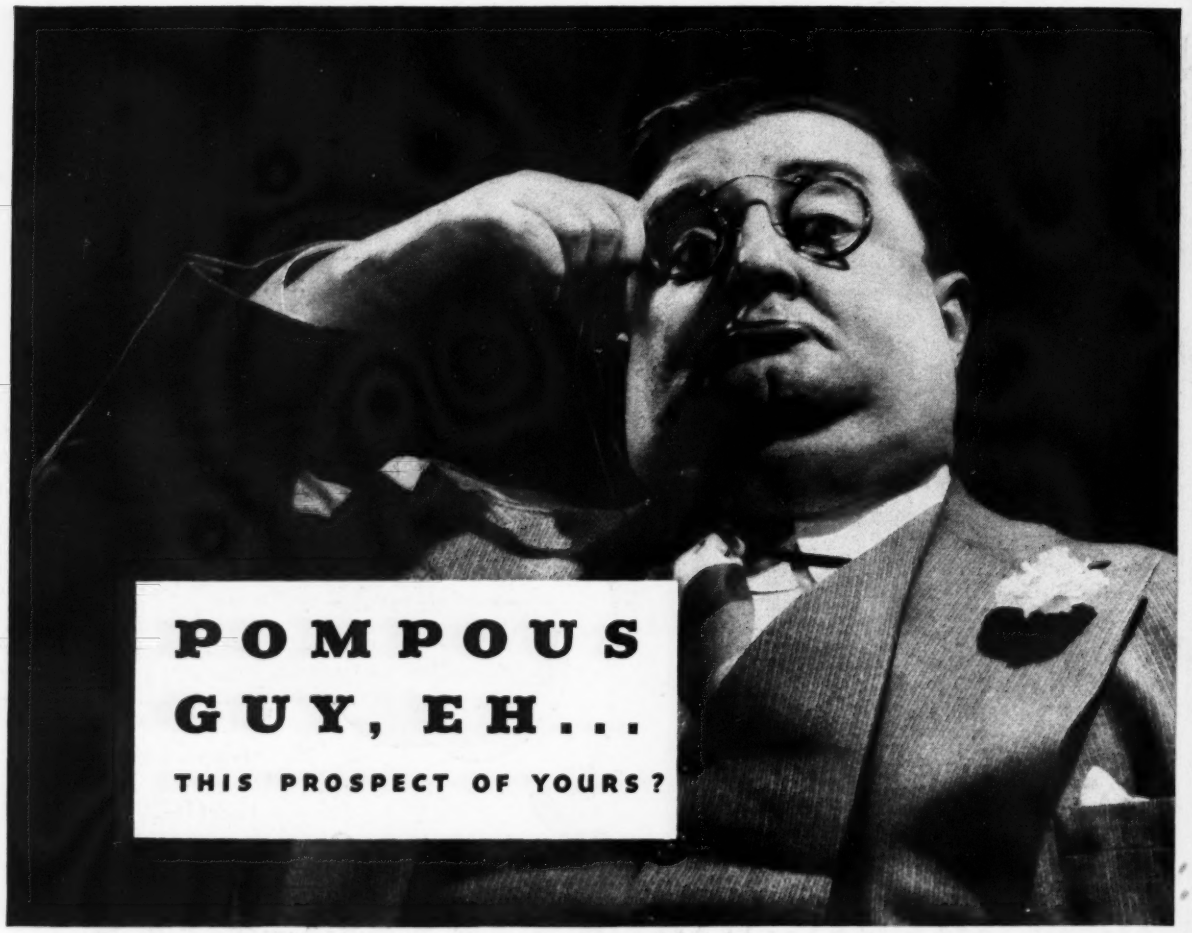

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